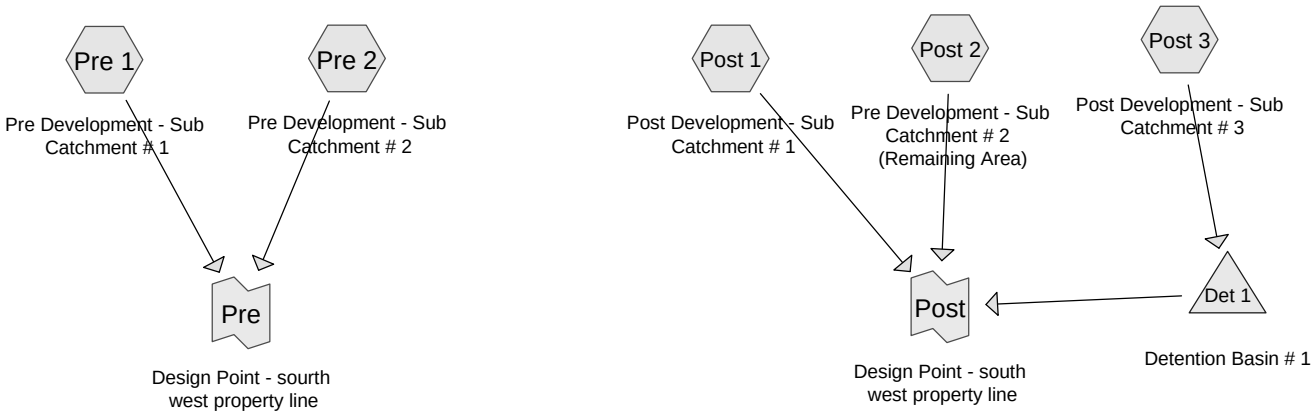
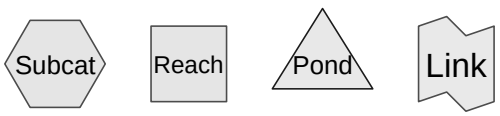




Routing Diagram for Hydrology Calculations 02-22-21
Prepared by DiVesta Civil Engineering Associates, Inc., Printed 2/23/2021

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Post 1: Post Development - Runoff Area=50,434 sf 8.68% Impervious Runoff Depth=1.69"
Flow Length=203' Tc=9.4 min CN=83 Runoff=2.03 cfs 0.163 af

Subcatchment Post 2: Pre Development - Runoff Area=55,668 sf 0.00% Impervious Runoff Depth=1.48"
Flow Length=388' Tc=12.1 min CN=80 Runoff=1.79 cfs 0.158 af

Subcatchment Post 3: Post Development - Runoff Area=6,985 sf 74.62% Impervious Runoff Depth=2.64"
Tc=5.0 min CN=94 Runoff=0.48 cfs 0.035 af

Subcatchment Pre 1: Pre Development - Runoff Area=46,466 sf 8.54% Impervious Runoff Depth=1.62"
Flow Length=198' Tc=9.6 min CN=82 Runoff=1.77 cfs 0.144 af

Subcatchment Pre 2: Pre Development - Runoff Area=66,627 sf 0.00% Impervious Runoff Depth=1.48"
Flow Length=437' Tc=12.4 min CN=80 Runoff=2.12 cfs 0.189 af

Pond Det 1: Detention Basin # 1 Peak Elev=46.32' Storage=582 cf Inflow=0.48 cfs 0.035 af
Discarded=0.03 cfs 0.032 af Primary=0.03 cfs 0.003 af Outflow=0.07 cfs 0.035 af

Link Post: Design Point - south west property line Inflow=3.75 cfs 0.324 af
Primary=3.75 cfs 0.324 af

Link Pre: Design Point - sourth west property line Inflow=3.84 cfs 0.332 af
Primary=3.84 cfs 0.332 af

Total Runoff Area = 5.192 ac Runoff Volume = 0.688 af Average Runoff Depth = 1.59"
94.01% Pervious = 4.881 ac 5.99% Impervious = 0.311 ac

Summary for Subcatchment Post 1: Post Development - Sub Catchment # 1

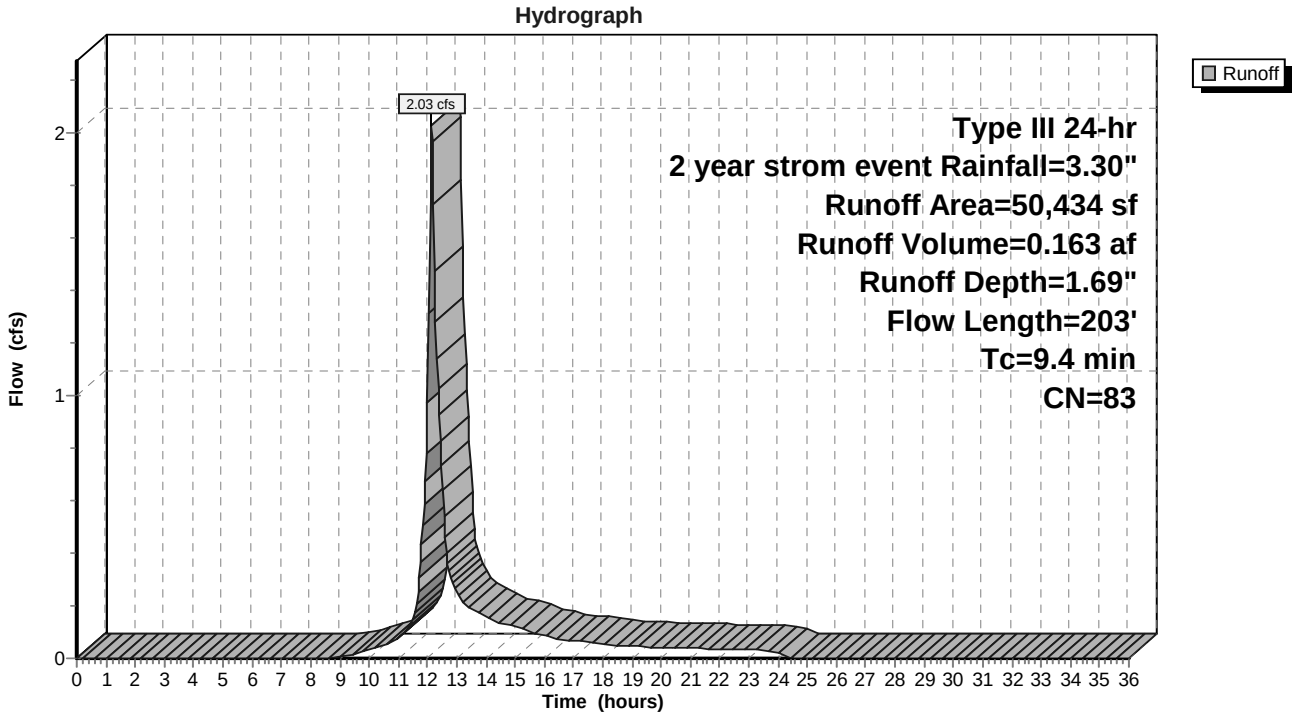
Runoff = 2.03 cfs @ 12.13 hrs, Volume= 0.163 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 year strom event Rainfall=3.30"

	Area (sf)	CN	Description
*	240	98	portion proposed driveway
*	2,523	98	existing driveway
*	1,444	98	existing garage roof
	1,811	79	Woods, Fair, HSG D
	16,779	84	50-75% Grass cover, Fair, HSG D
	21,561	79	Woods, Fair, HSG D
	5,905	84	50-75% Grass cover, Fair, HSG D
*	171	98	proposed walk
	50,434	83	Weighted Average
	46,056		91.32% Pervious Area
	4,378		8.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	113	0.0820	0.21		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.3	41	0.1460	2.67		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.4	203	Total			

Subcatchment Post 1: Post Development - Sub Catchment # 1



Summary for Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)

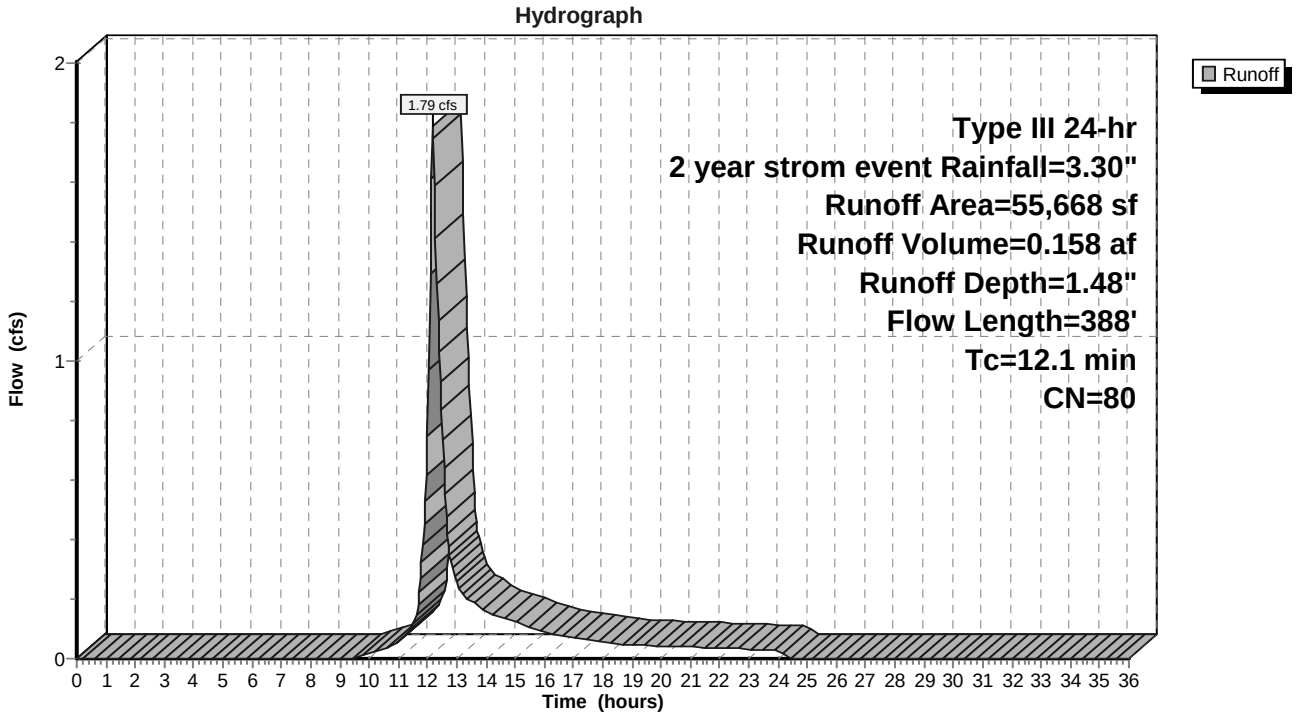
Runoff = 1.79 cfs @ 12.17 hrs, Volume= 0.158 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 year strom event Rainfall=3.30"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	12,934	84	50-75% Grass cover, Fair, HSG D
	34,647	79	Woods, Fair, HSG D
	55,668	80	Weighted Average
	55,668		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.1	388	Total			

Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)



Summary for Subcatchment Post 3: Post Development - Sub Catchment # 3

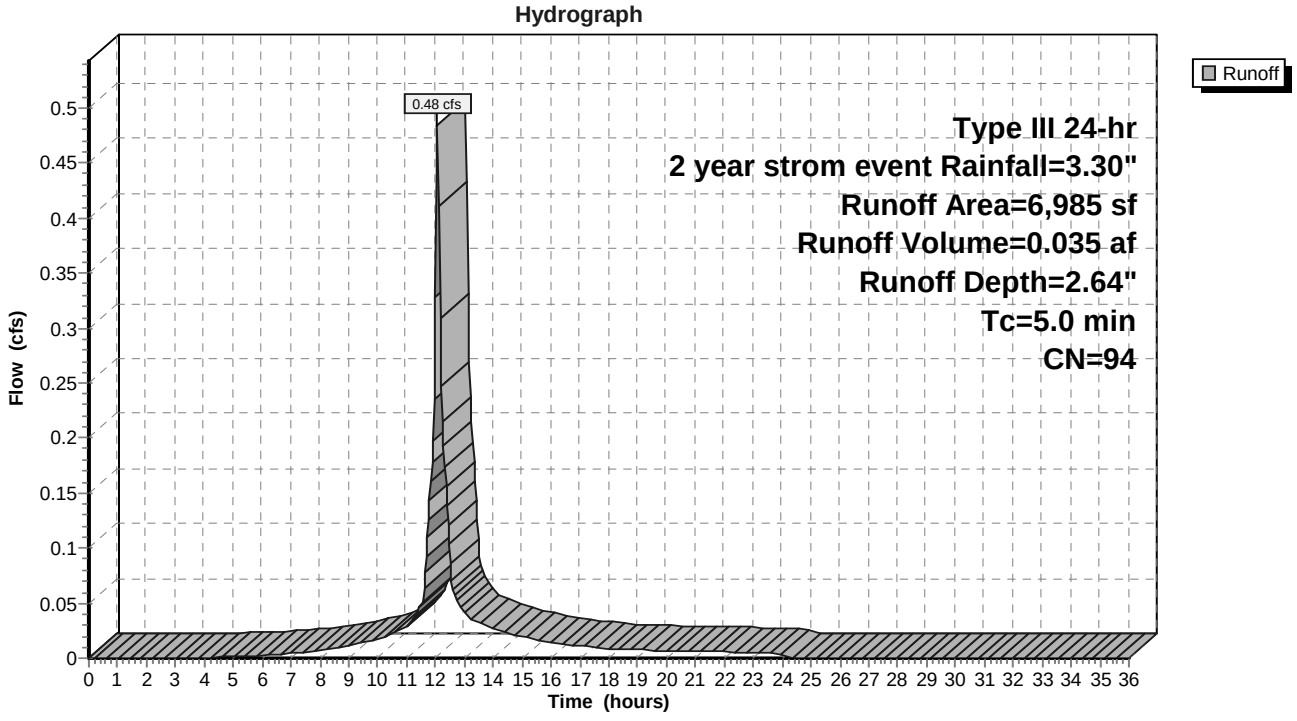
Runoff = 0.48 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 year strom event Rainfall=3.30"

	Area (sf)	CN	Description
*	3,783	98	proposed roof area
*	1,429	98	proposed driveway
	1,773	84	50-75% Grass cover, Fair, HSG D
	6,985	94	Weighted Average
	1,773		25.38% Pervious Area
	5,212		74.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, direct enrtry**

Subcatchment Post 3: Post Development - Sub Catchment # 3



Summary for Subcatchment Pre 1: Pre Development - Sub Catchment # 1

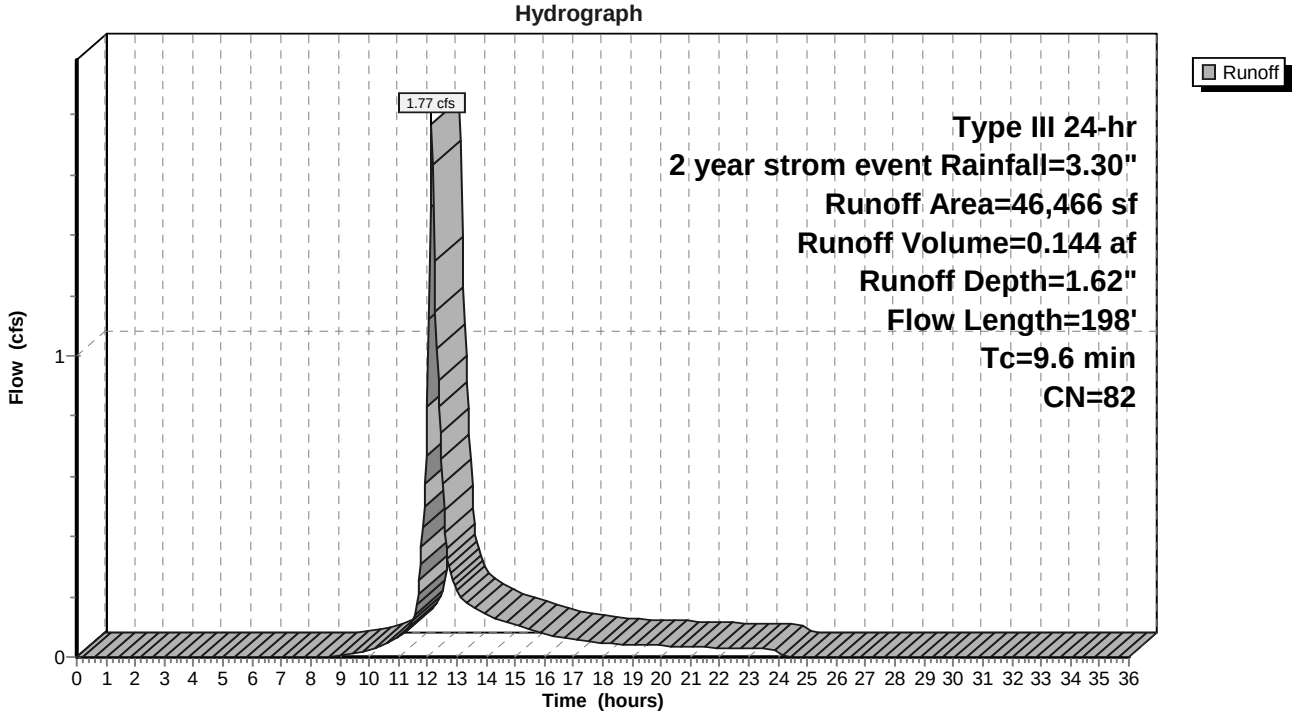
Runoff = 1.77 cfs @ 12.14 hrs, Volume= 0.144 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 year strom event Rainfall=3.30"

	Area (sf)	CN	Description
*	1,811	79	wetlands
	17,351	84	50-75% Grass cover, Fair, HSG D
	23,337	79	Woods, Fair, HSG D
*	1,444	98	Existing garage roof
*	2,523	98	existing driveway
	46,466	82	Weighted Average
	42,499		91.46% Pervious Area
	3,967		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	108	0.0740	0.20		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.4	41	0.0500	1.57		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.6	198	Total			

Subcatchment Pre 1: Pre Development - Sub Catchment # 1



Summary for Subcatchment Pre 2: Pre Development - Sub Catchment # 2

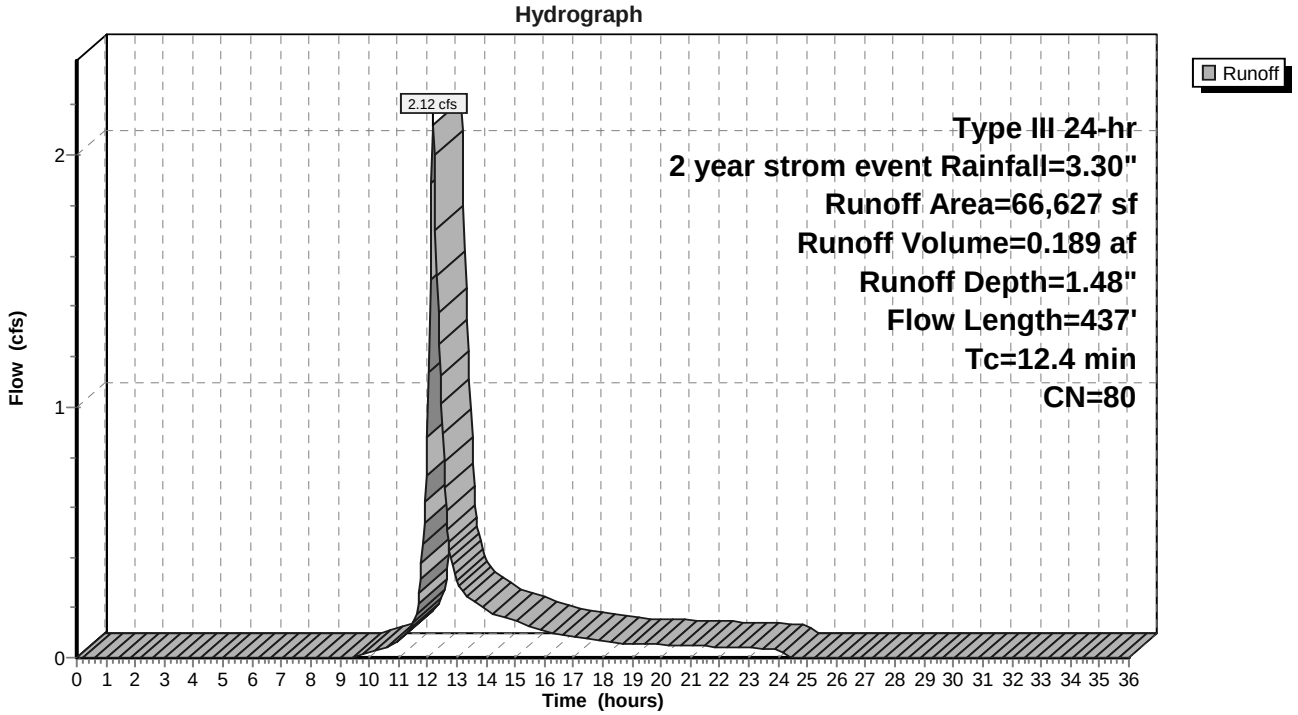
Runoff = 2.12 cfs @ 12.18 hrs, Volume= 0.189 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 year strom event Rainfall=3.30"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	18,913	84	50-75% Grass cover, Fair, HSG D
	39,627	79	Woods, Fair, HSG D
	66,627	80	Weighted Average
	66,627		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.4	437	Total			

Subcatchment Pre 2: Pre Development - Sub Catchment # 2



Summary for Pond Det 1: Detention Basin # 1

Inflow Area = 0.160 ac, 74.62% Impervious, Inflow Depth = 2.64" for 2 year strom event event
Inflow = 0.48 cfs @ 12.07 hrs, Volume= 0.035 af
Outflow = 0.07 cfs @ 12.58 hrs, Volume= 0.035 af, Atten= 86%, Lag= 30.6 min
Discarded = 0.03 cfs @ 11.20 hrs, Volume= 0.032 af
Primary = 0.03 cfs @ 12.58 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 46.32' @ 12.58 hrs Surf.Area= 1,278 sf Storage= 582 cf

Plug-Flow detention time= 121.4 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 121.3 min (906.5 - 785.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	45.50'	535 cf	**18.00'W x 71.00'L x 1.54'H Field A** 1,970 cf Overall - 633 cf Embedded = 1,337 cf x 40.0% Voids
#2A	46.00'	633 cf	**Cultec C-100HD** x 45 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 5 rows
		1,168 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	46.66'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600
#3	Discarded	45.50'	**1.090 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 11.20 hrs HW=45.52' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.03 cfs @ 12.58 hrs HW=46.32' (Free Discharge)
├**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.18 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond Det 1: Detention Basin # 1 - Chamber Wizard Field A

Chamber Model = Cultec C-100HD (Cultec Contactor® 100HD)
Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf
Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap
Row Length Adjustment= +0.50' x 1.86 sf x 5 rows

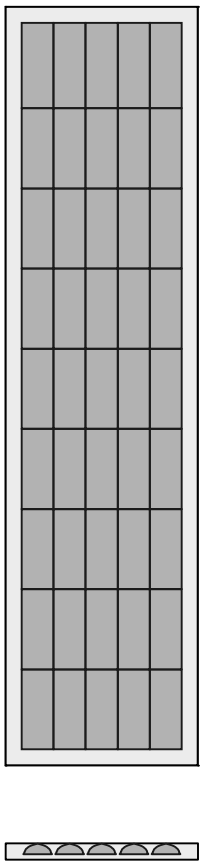
9 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 68.00' Row Length +18.0" End Stone x 2 = 71.00' Base Length
5 Rows x 36.0" Wide + 18.0" Side Stone x 2 = 18.00' Base Width
6.0" Base + 12.5" Chamber Height = 1.54' Field Height

45 Chambers x 14.0 cf +0.50' Row Adjustment x 1.86 sf x 5 Rows = 632.9 cf Chamber Storage

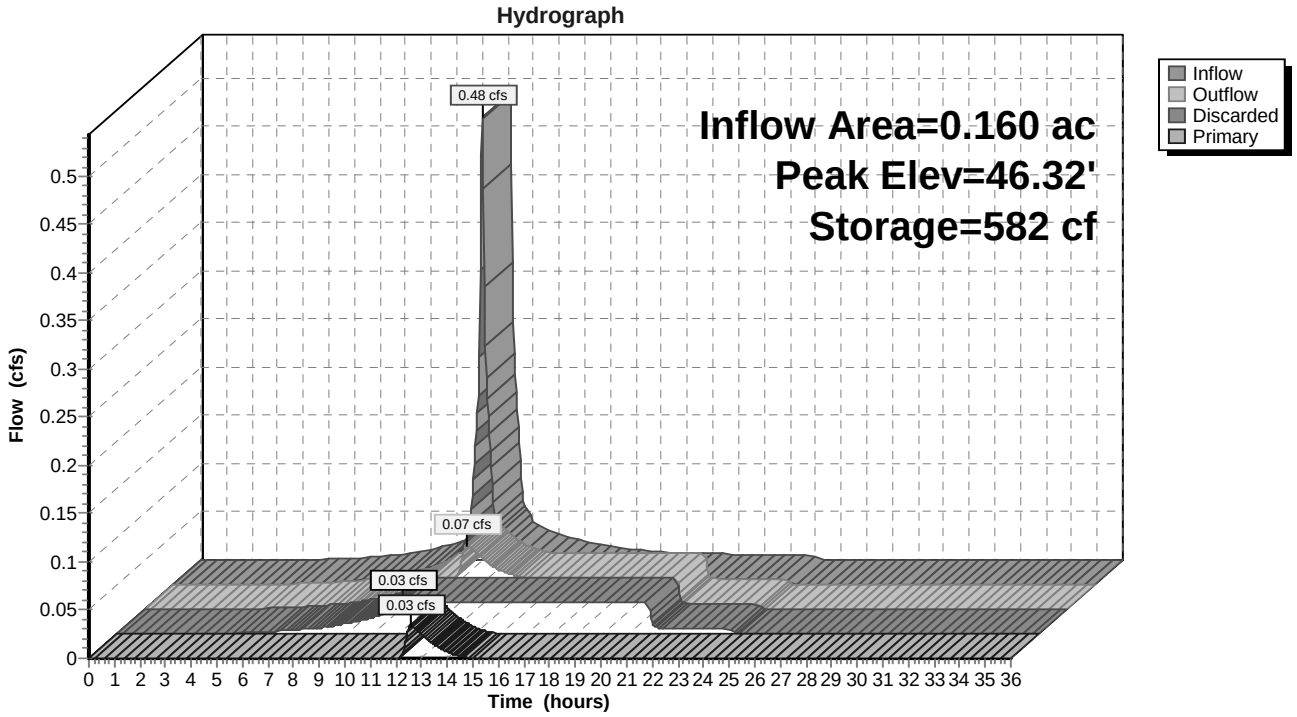
1,970.3 cf Field - 632.9 cf Chambers = 1,337.3 cf Stone x 40.0% Voids = 534.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,167.8 cf = 0.027 af
Overall Storage Efficiency = 59.3%
Overall System Size = 71.00' x 18.00' x 1.54'

45 Chambers
73.0 cy Field
49.5 cy Stone



Pond Det 1: Detention Basin # 1

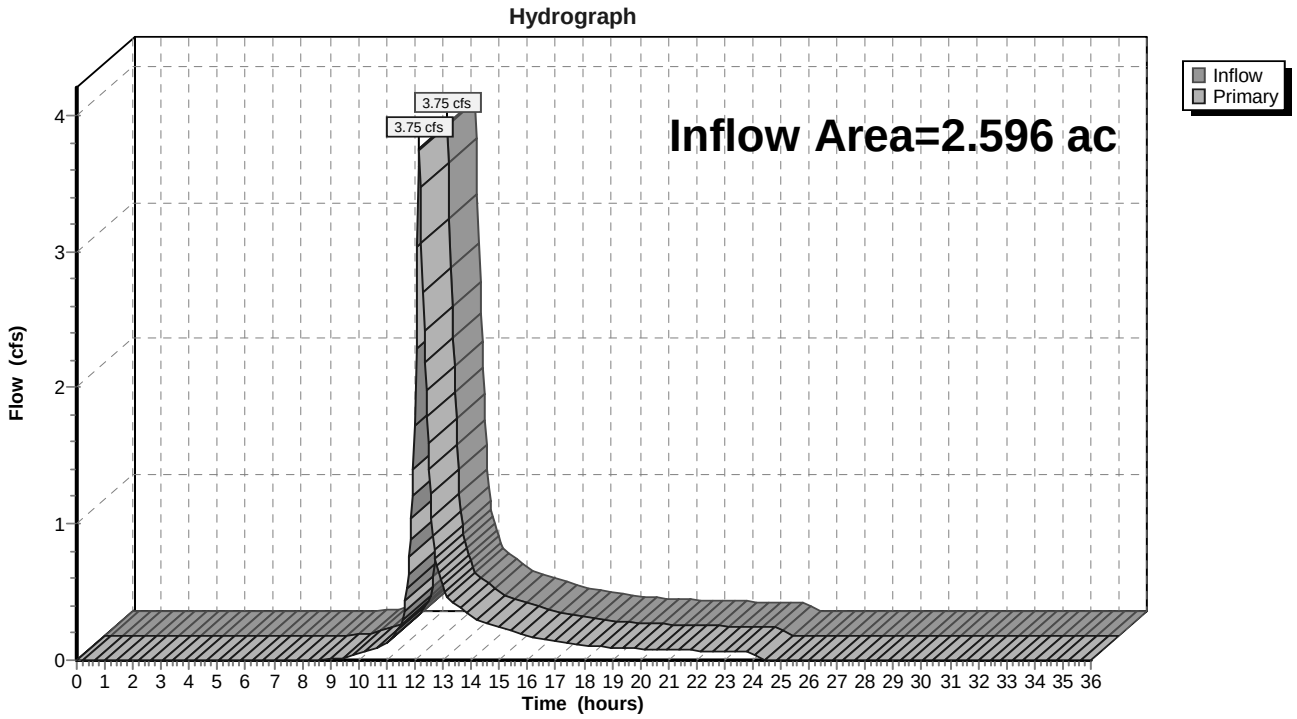


Summary for Link Post: Design Point - south west property line

Inflow Area = 2.596 ac, 8.48% Impervious, Inflow Depth = 1.50" for 2 year strom event event
Inflow = 3.75 cfs @ 12.15 hrs, Volume= 0.324 af
Primary = 3.75 cfs @ 12.15 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Post: Design Point - south west property line

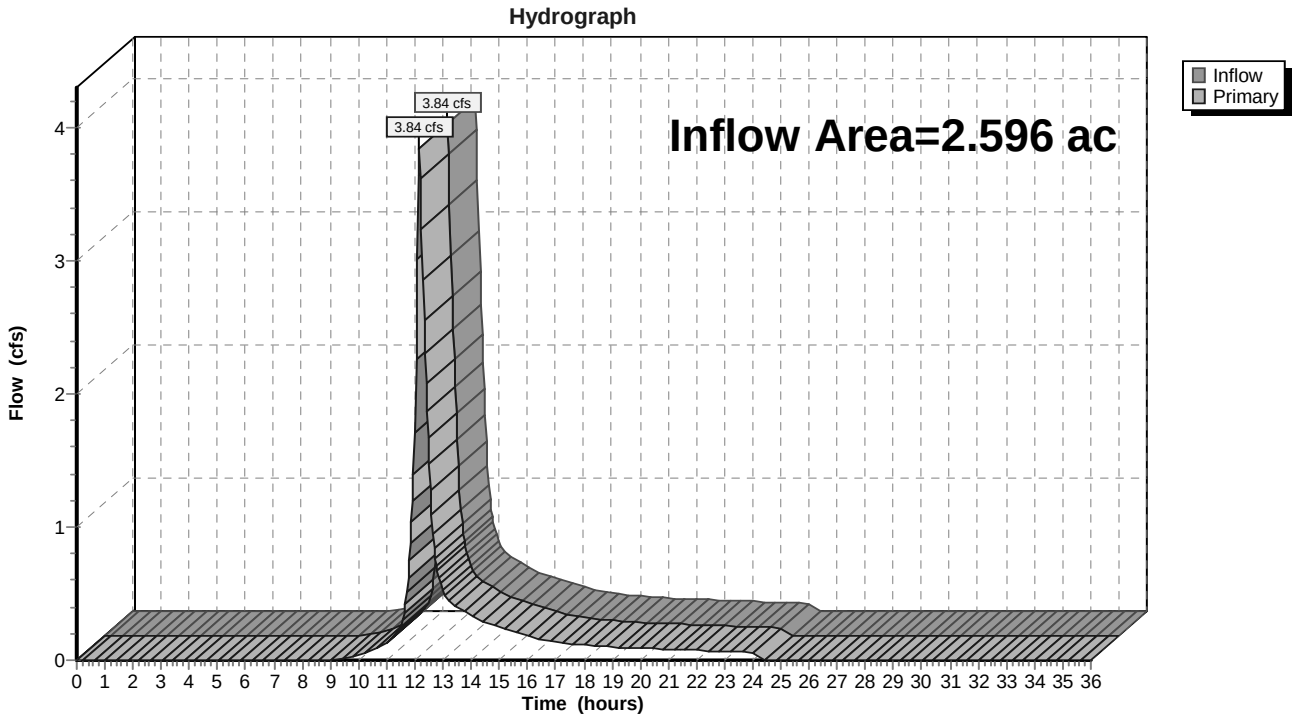


Summary for Link Pre: Design Point - sourth west property line

Inflow Area = 2.596 ac, 3.51% Impervious, Inflow Depth = 1.54" for 2 year strom event event
Inflow = 3.84 cfs @ 12.16 hrs, Volume= 0.332 af
Primary = 3.84 cfs @ 12.16 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Pre: Design Point - sourth west property line



Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Post 1: Post Development - Runoff Area=50,434 sf 8.68% Impervious Runoff Depth=3.17"
Flow Length=203' Tc=9.4 min CN=83 Runoff=3.80 cfs 0.306 af

Subcatchment Post 2: Pre Development - Runoff Area=55,668 sf 0.00% Impervious Runoff Depth=2.89"
Flow Length=388' Tc=12.1 min CN=80 Runoff=3.54 cfs 0.308 af

Subcatchment Post 3: Post Development - Runoff Area=6,985 sf 74.62% Impervious Runoff Depth=4.31"
Tc=5.0 min CN=94 Runoff=0.77 cfs 0.058 af

Subcatchment Pre 1: Pre Development - Runoff Area=46,466 sf 8.54% Impervious Runoff Depth=3.08"
Flow Length=198' Tc=9.6 min CN=82 Runoff=3.38 cfs 0.274 af

Subcatchment Pre 2: Pre Development - Runoff Area=66,627 sf 0.00% Impervious Runoff Depth=2.89"
Flow Length=437' Tc=12.4 min CN=80 Runoff=4.20 cfs 0.369 af

Pond Det 1: Detention Basin # 1 Peak Elev=46.58' Storage=835 cf Inflow=0.77 cfs 0.058 af
Discarded=0.03 cfs 0.040 af Primary=0.20 cfs 0.017 af Outflow=0.23 cfs 0.058 af

Link Post: Design Point - south west property line Inflow=7.36 cfs 0.631 af
Primary=7.36 cfs 0.631 af

Link Pre: Design Point - sourth west property line Inflow=7.46 cfs 0.642 af
Primary=7.46 cfs 0.642 af

Total Runoff Area = 5.192 ac Runoff Volume = 1.314 af Average Runoff Depth = 3.04"
94.01% Pervious = 4.881 ac 5.99% Impervious = 0.311 ac

Summary for Subcatchment Post 1: Post Development - Sub Catchment # 1

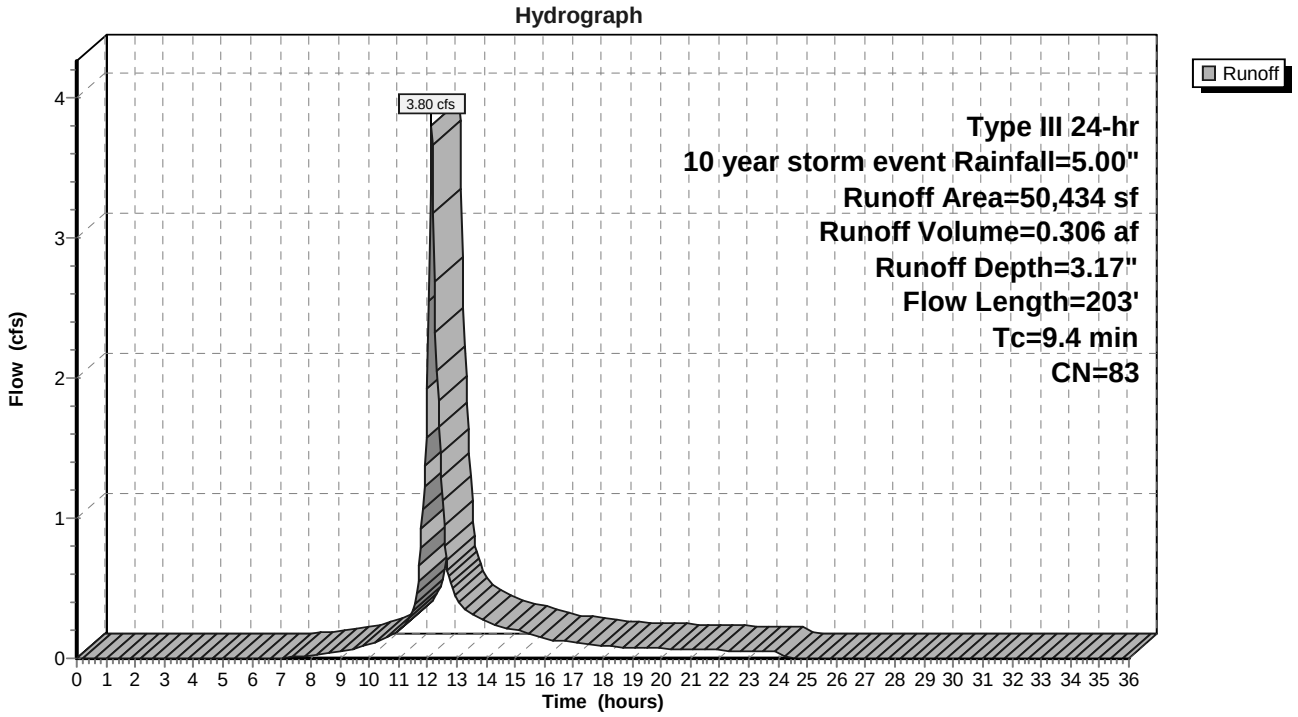
Runoff = 3.80 cfs @ 12.13 hrs, Volume= 0.306 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 year storm event Rainfall=5.00"

	Area (sf)	CN	Description
*	240	98	portion proposed driveway
*	2,523	98	existing driveway
*	1,444	98	existing garage roof
	1,811	79	Woods, Fair, HSG D
	16,779	84	50-75% Grass cover, Fair, HSG D
	21,561	79	Woods, Fair, HSG D
	5,905	84	50-75% Grass cover, Fair, HSG D
*	171	98	proposed walk
	50,434	83	Weighted Average
	46,056		91.32% Pervious Area
	4,378		8.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	113	0.0820	0.21		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.3	41	0.1460	2.67		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.4	203	Total			

Subcatchment Post 1: Post Development - Sub Catchment # 1



Summary for Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)

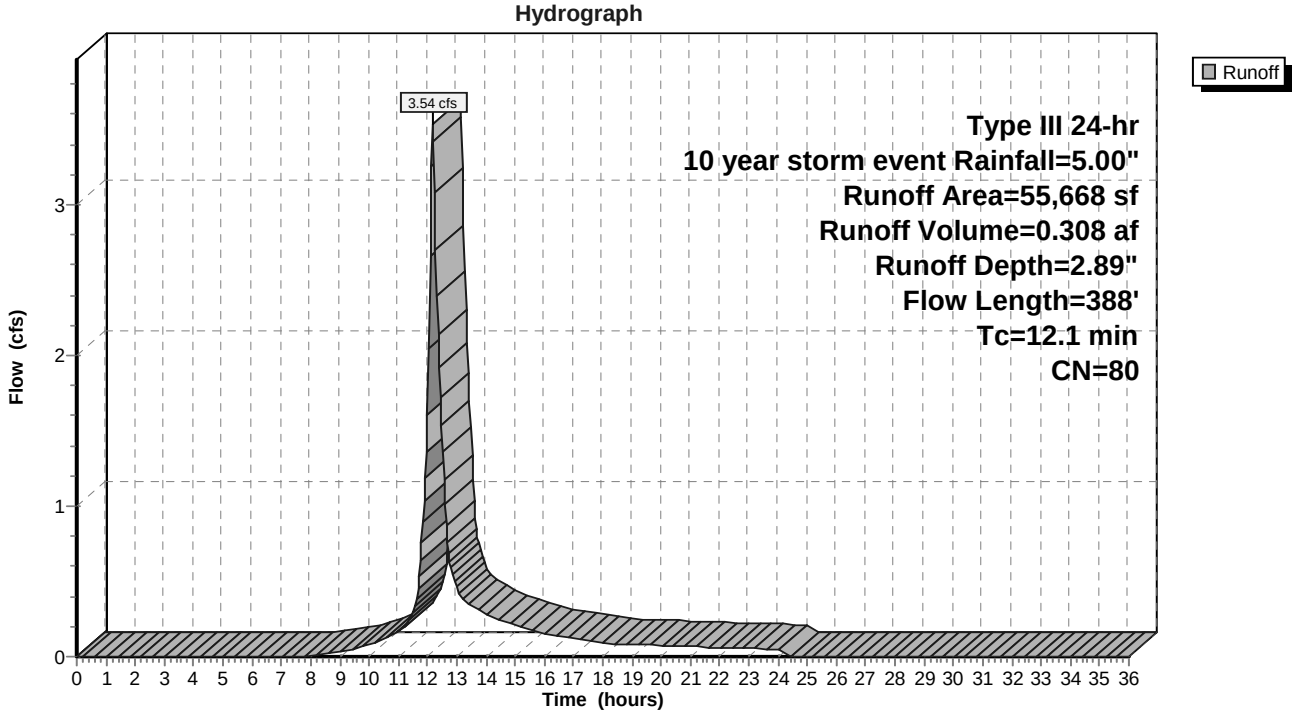
Runoff = 3.54 cfs @ 12.17 hrs, Volume= 0.308 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 year storm event Rainfall=5.00"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	12,934	84	50-75% Grass cover, Fair, HSG D
	34,647	79	Woods, Fair, HSG D
	55,668	80	Weighted Average
	55,668		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.1	388	Total			

Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)



Summary for Subcatchment Post 3: Post Development - Sub Catchment # 3

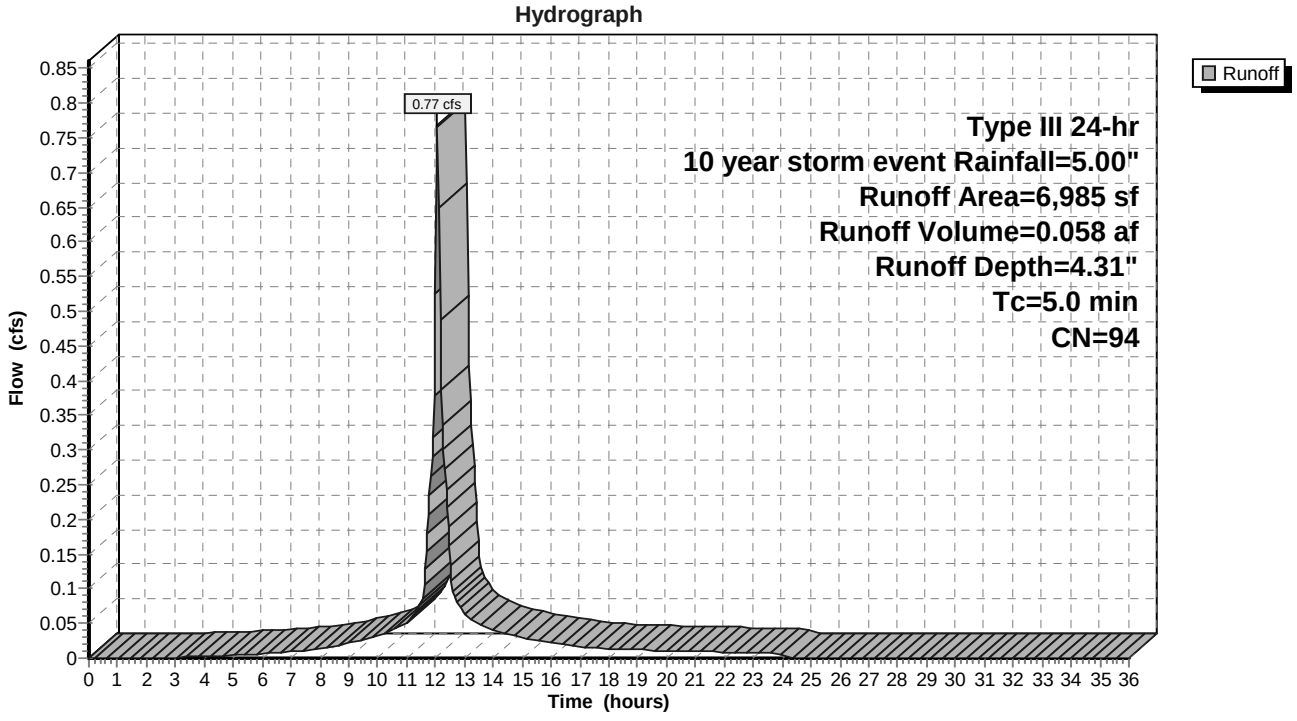
Runoff = 0.77 cfs @ 12.07 hrs, Volume= 0.058 af, Depth= 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 year storm event Rainfall=5.00"

	Area (sf)	CN	Description
*	3,783	98	proposed roof area
*	1,429	98	proposed driveway
	1,773	84	50-75% Grass cover, Fair, HSG D
	6,985	94	Weighted Average
	1,773		25.38% Pervious Area
	5,212		74.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, direct enrtry**

Subcatchment Post 3: Post Development - Sub Catchment # 3



Summary for Subcatchment Pre 1: Pre Development - Sub Catchment # 1

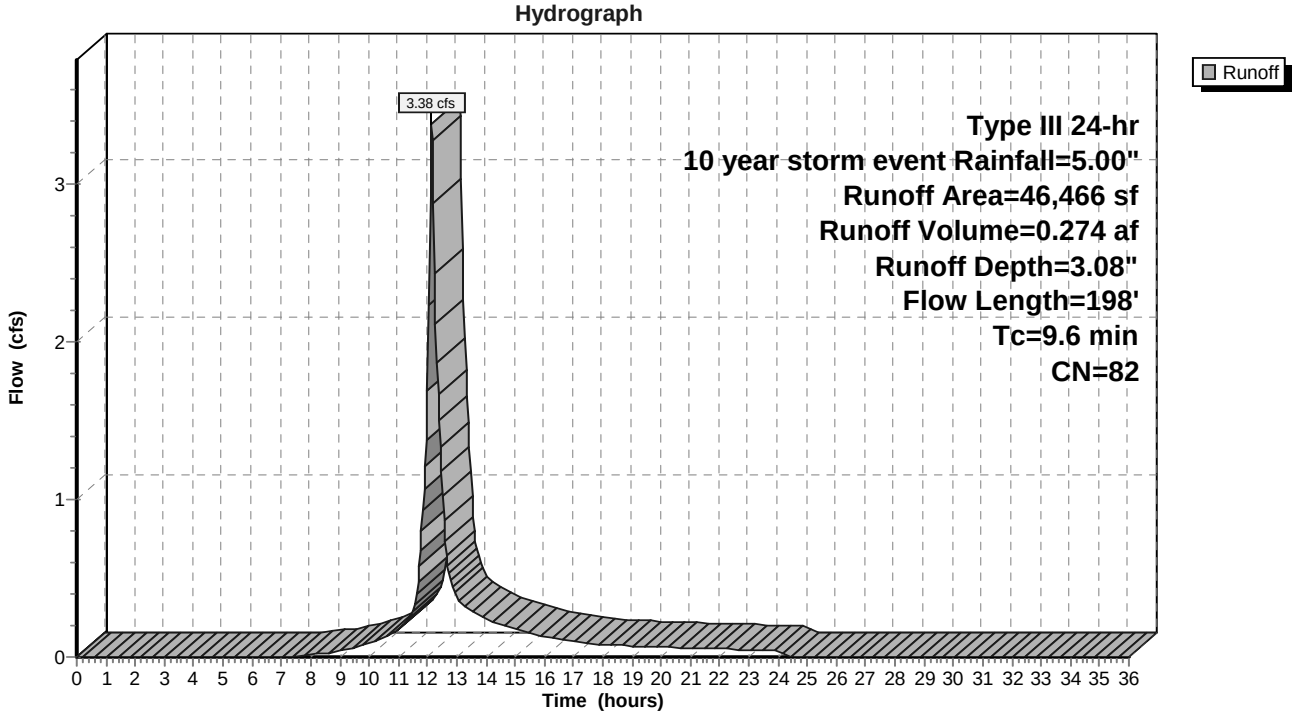
Runoff = 3.38 cfs @ 12.13 hrs, Volume= 0.274 af, Depth= 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 year storm event Rainfall=5.00"

	Area (sf)	CN	Description
*	1,811	79	wetlands
	17,351	84	50-75% Grass cover, Fair, HSG D
	23,337	79	Woods, Fair, HSG D
*	1,444	98	Existing garage roof
*	2,523	98	existing driveway
	46,466	82	Weighted Average
	42,499		91.46% Pervious Area
	3,967		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	108	0.0740	0.20		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.4	41	0.0500	1.57		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.6	198	Total			

Subcatchment Pre 1: Pre Development - Sub Catchment # 1



Summary for Subcatchment Pre 2: Pre Development - Sub Catchment # 2

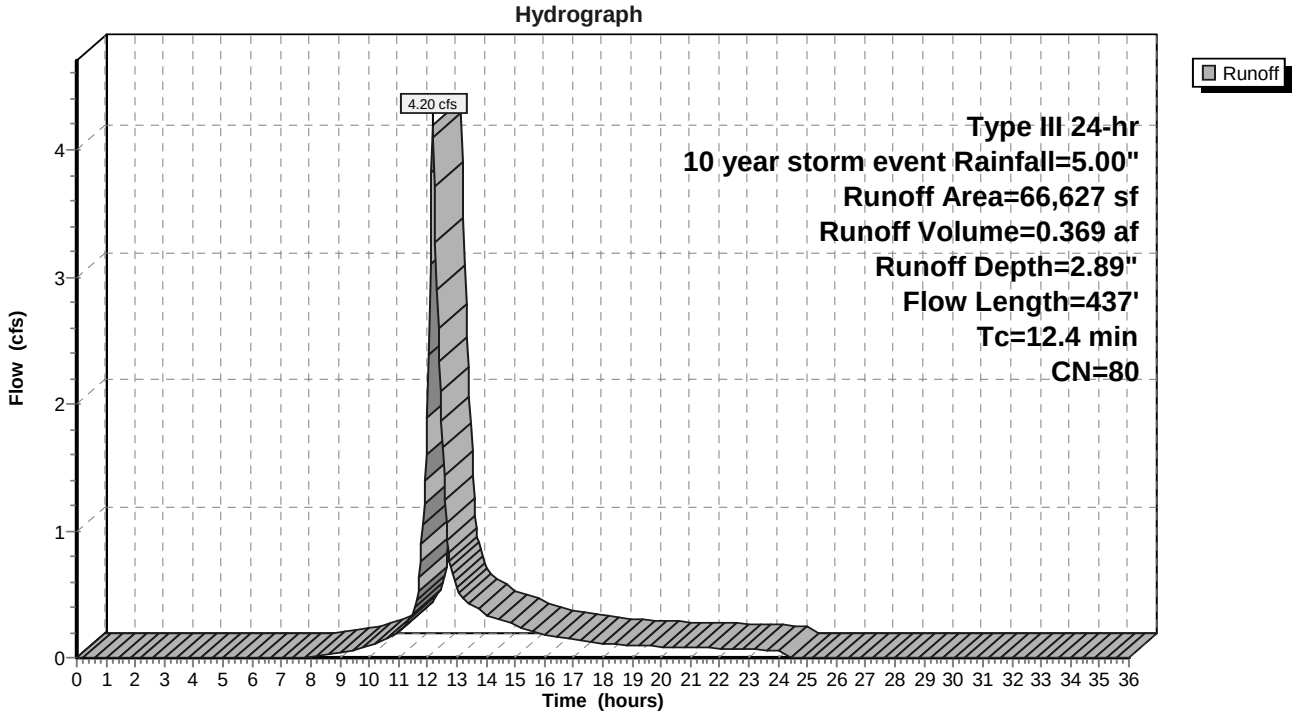
Runoff = 4.20 cfs @ 12.17 hrs, Volume= 0.369 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 year storm event Rainfall=5.00"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	18,913	84	50-75% Grass cover, Fair, HSG D
	39,627	79	Woods, Fair, HSG D
	66,627	80	Weighted Average
	66,627		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.4	437	Total			

Subcatchment Pre 2: Pre Development - Sub Catchment # 2



Summary for Pond Det 1: Detention Basin # 1

Inflow Area = 0.160 ac, 74.62% Impervious, Inflow Depth = 4.31" for 10 year storm event event
Inflow = 0.77 cfs @ 12.07 hrs, Volume= 0.058 af
Outflow = 0.23 cfs @ 12.38 hrs, Volume= 0.058 af, Atten= 70%, Lag= 18.6 min
Discarded = 0.03 cfs @ 10.16 hrs, Volume= 0.040 af
Primary = 0.20 cfs @ 12.38 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 46.58' @ 12.38 hrs Surf.Area= 1,278 sf Storage= 835 cf

Plug-Flow detention time= 103.4 min calculated for 0.058 af (100% of inflow)
Center-of-Mass det. time= 103.3 min (875.8 - 772.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	45.50'	535 cf	**18.00'W x 71.00'L x 1.54'H Field A** 1,970 cf Overall - 633 cf Embedded = 1,337 cf x 40.0% Voids
#2A	46.00'	633 cf	**Cultec C-100HD** x 45 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 5 rows
		1,168 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	46.66'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600
#3	Discarded	45.50'	**1.090 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 10.16 hrs HW=45.52' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.20 cfs @ 12.38 hrs HW=46.58' (Free Discharge)
├**1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 2.24 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond Det 1: Detention Basin # 1 - Chamber Wizard Field A

Chamber Model = Cultec C-100HD (Cultec Contactor® 100HD)
Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf
Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap
Row Length Adjustment= +0.50' x 1.86 sf x 5 rows

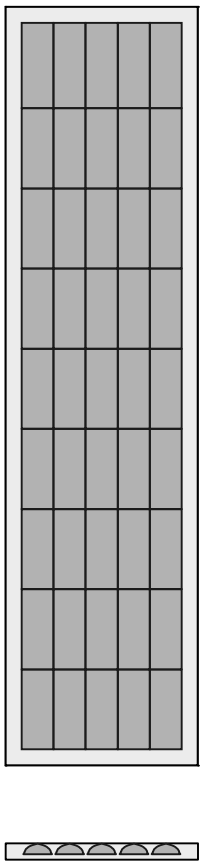
9 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 68.00' Row Length +18.0" End Stone x 2 = 71.00' Base Length
5 Rows x 36.0" Wide + 18.0" Side Stone x 2 = 18.00' Base Width
6.0" Base + 12.5" Chamber Height = 1.54' Field Height

45 Chambers x 14.0 cf +0.50' Row Adjustment x 1.86 sf x 5 Rows = 632.9 cf Chamber Storage

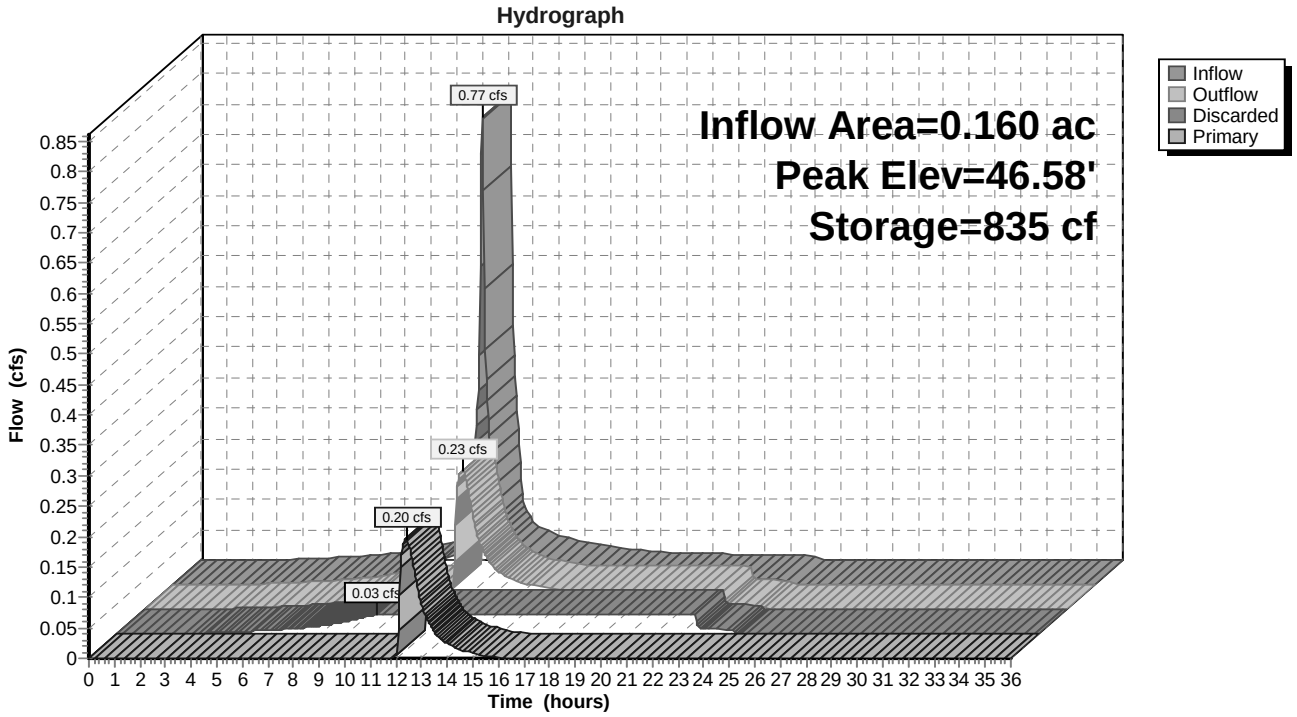
1,970.3 cf Field - 632.9 cf Chambers = 1,337.3 cf Stone x 40.0% Voids = 534.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,167.8 cf = 0.027 af
Overall Storage Efficiency = 59.3%
Overall System Size = 71.00' x 18.00' x 1.54'

45 Chambers
73.0 cy Field
49.5 cy Stone



Pond Det 1: Detention Basin # 1

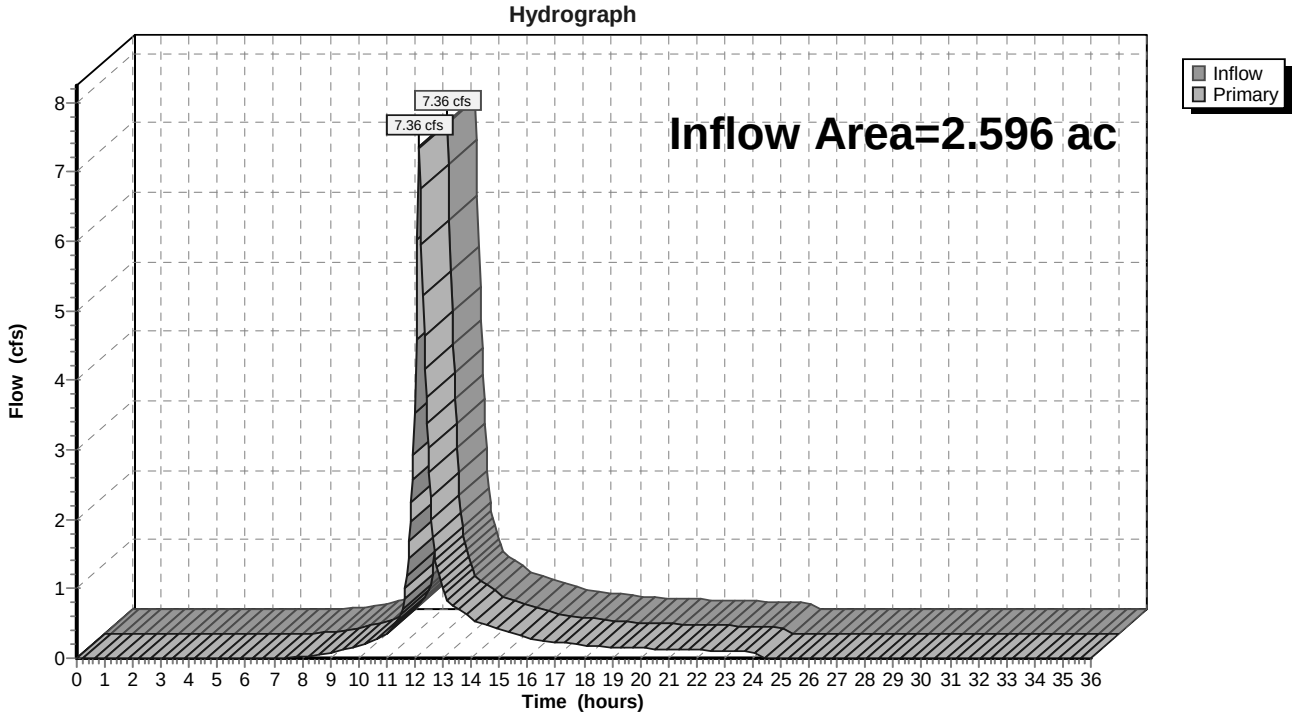


Summary for Link Post: Design Point - south west property line

Inflow Area = 2.596 ac, 8.48% Impervious, Inflow Depth = 2.92" for 10 year storm event event
Inflow = 7.36 cfs @ 12.15 hrs, Volume= 0.631 af
Primary = 7.36 cfs @ 12.15 hrs, Volume= 0.631 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Post: Design Point - south west property line

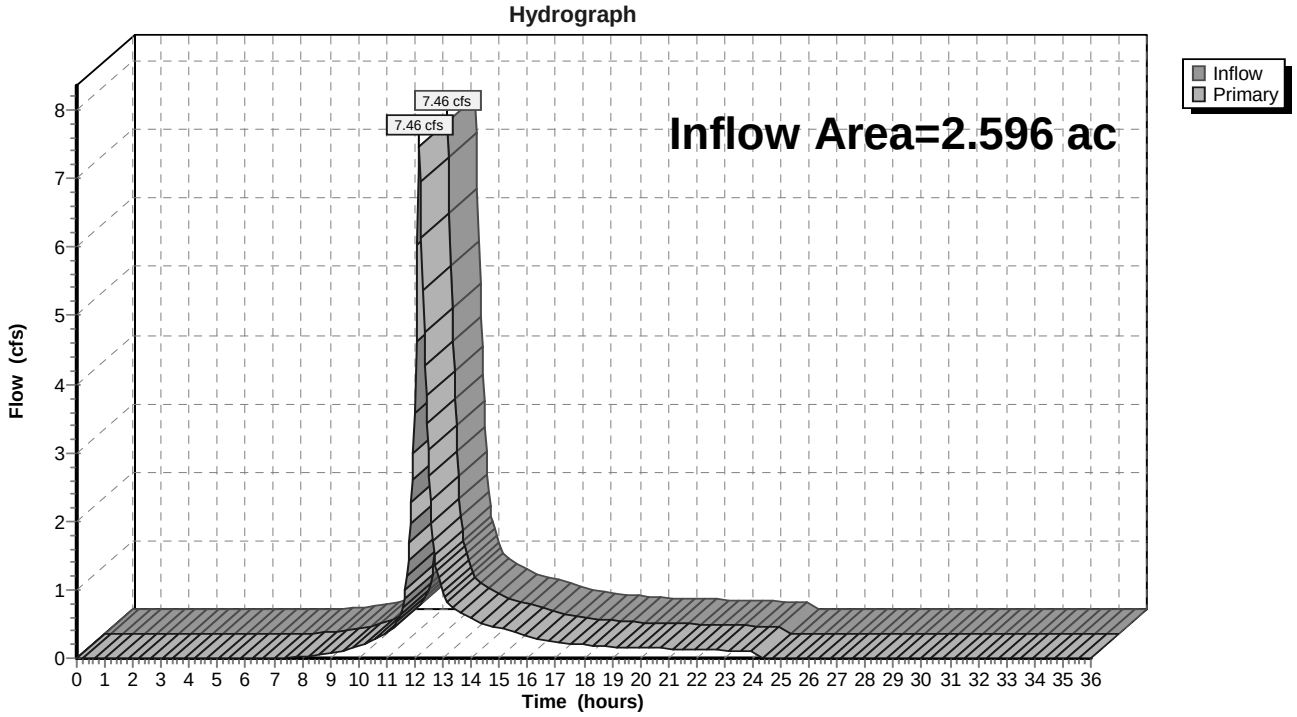


Summary for Link Pre: Design Point - sourth west property line

Inflow Area = 2.596 ac, 3.51% Impervious, Inflow Depth = 2.97" for 10 year storm event event
Inflow = 7.46 cfs @ 12.15 hrs, Volume= 0.642 af
Primary = 7.46 cfs @ 12.15 hrs, Volume= 0.642 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Pre: Design Point - sourth west property line



Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Post 1: Post Development - Runoff Area=50,434 sf 8.68% Impervious Runoff Depth=3.81"
Flow Length=203' Tc=9.4 min CN=83 Runoff=4.55 cfs 0.368 af

Subcatchment Post 2: Pre Development - Runoff Area=55,668 sf 0.00% Impervious Runoff Depth=3.51"
Flow Length=388' Tc=12.1 min CN=80 Runoff=4.29 cfs 0.374 af

Subcatchment Post 3: Post Development - Runoff Area=6,985 sf 74.62% Impervious Runoff Depth=5.00"
Tc=5.0 min CN=94 Runoff=0.88 cfs 0.067 af

Subcatchment Pre 1: Pre Development - Runoff Area=46,466 sf 8.54% Impervious Runoff Depth=3.71"
Flow Length=198' Tc=9.6 min CN=82 Runoff=4.06 cfs 0.330 af

Subcatchment Pre 2: Pre Development - Runoff Area=66,627 sf 0.00% Impervious Runoff Depth=3.51"
Flow Length=437' Tc=12.4 min CN=80 Runoff=5.09 cfs 0.448 af

Pond Det 1: Detention Basin # 1 Peak Elev=46.71' Storage=950 cf Inflow=0.88 cfs 0.067 af
Discarded=0.03 cfs 0.043 af Primary=0.26 cfs 0.024 af Outflow=0.29 cfs 0.067 af

Link Post: Design Point - south west property line Inflow=8.90 cfs 0.766 af
Primary=8.90 cfs 0.766 af

Link Pre: Design Point - sourth west property line Inflow=9.01 cfs 0.778 af
Primary=9.01 cfs 0.778 af

Total Runoff Area = 5.192 ac Runoff Volume = 1.586 af Average Runoff Depth = 3.67"
94.01% Pervious = 4.881 ac 5.99% Impervious = 0.311 ac

Summary for Subcatchment Post 1: Post Development - Sub Catchment # 1

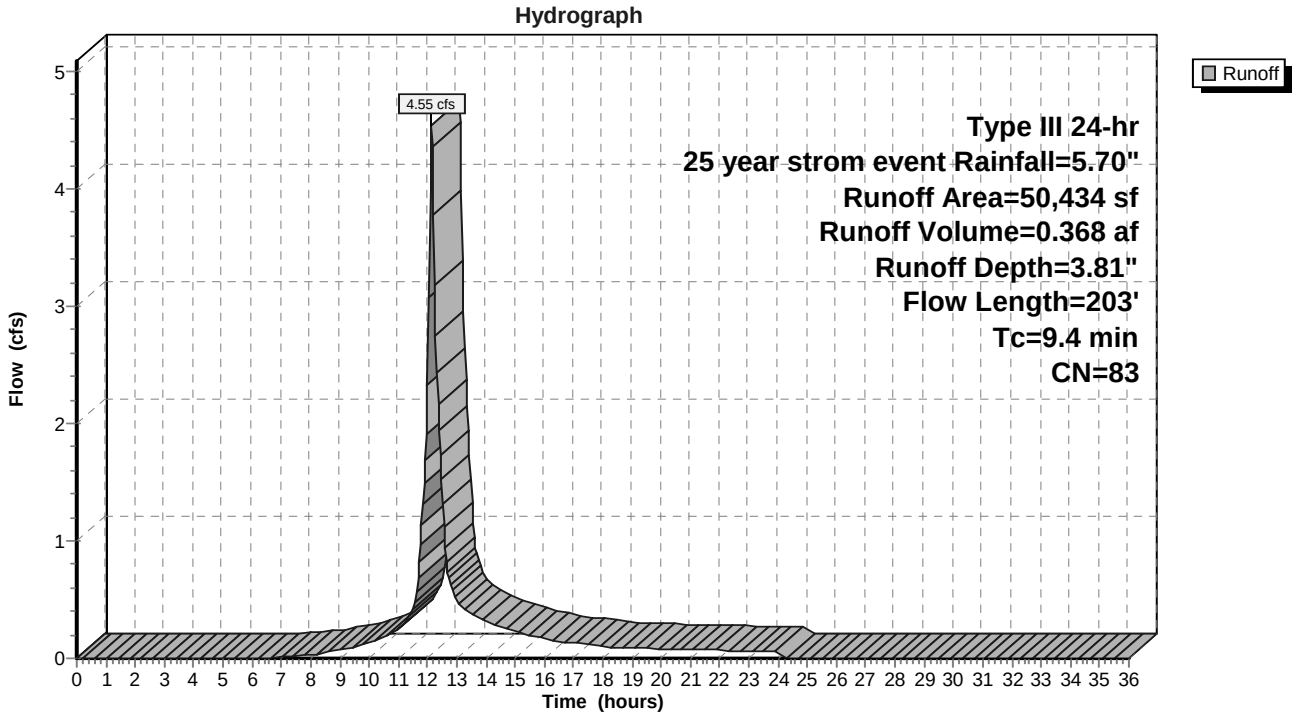
Runoff = 4.55 cfs @ 12.13 hrs, Volume= 0.368 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 year strom event Rainfall=5.70"

	Area (sf)	CN	Description
*	240	98	portion proposed driveway
*	2,523	98	existing driveway
*	1,444	98	existing garage roof
	1,811	79	Woods, Fair, HSG D
	16,779	84	50-75% Grass cover, Fair, HSG D
	21,561	79	Woods, Fair, HSG D
	5,905	84	50-75% Grass cover, Fair, HSG D
*	171	98	proposed walk
	50,434	83	Weighted Average
	46,056		91.32% Pervious Area
	4,378		8.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	113	0.0820	0.21		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.3	41	0.1460	2.67		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.4	203	Total			

Subcatchment Post 1: Post Development - Sub Catchment # 1



Summary for Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)

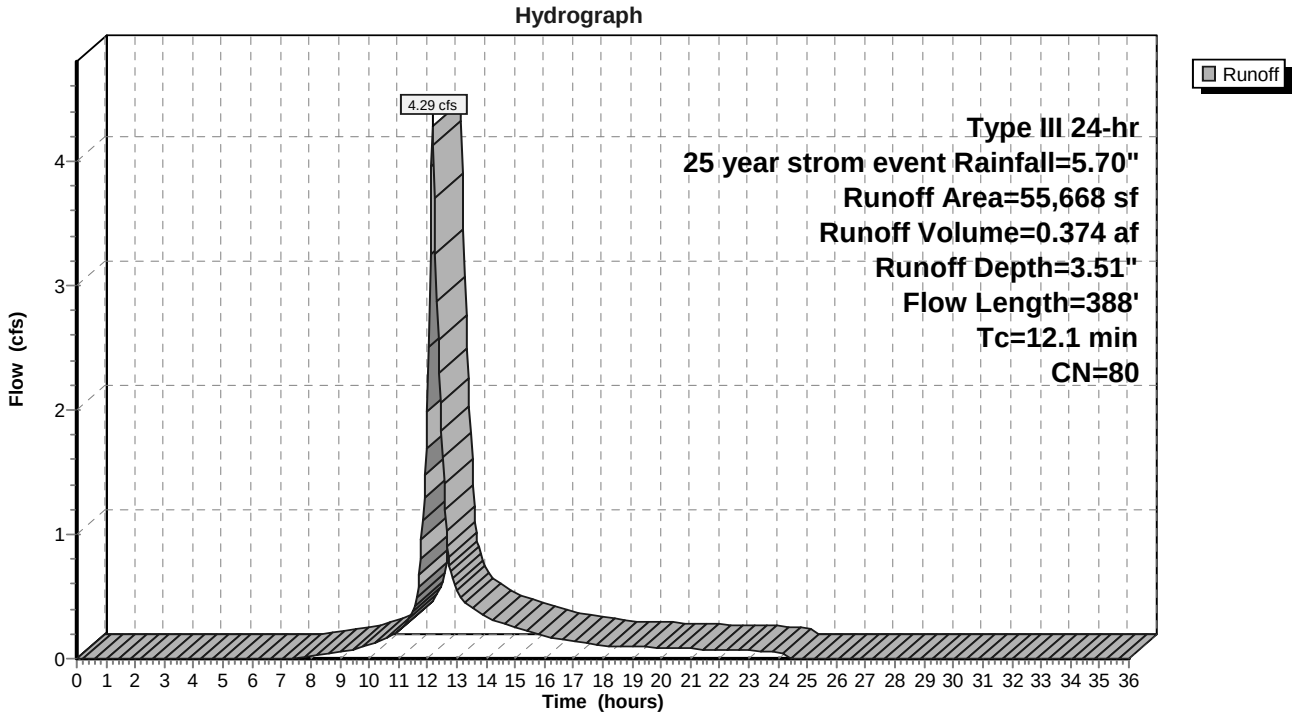
Runoff = 4.29 cfs @ 12.17 hrs, Volume= 0.374 af, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 year strom event Rainfall=5.70"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	12,934	84	50-75% Grass cover, Fair, HSG D
	34,647	79	Woods, Fair, HSG D
	55,668	80	Weighted Average
	55,668		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.1	388	Total			

Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)



Summary for Subcatchment Post 3: Post Development - Sub Catchment # 3

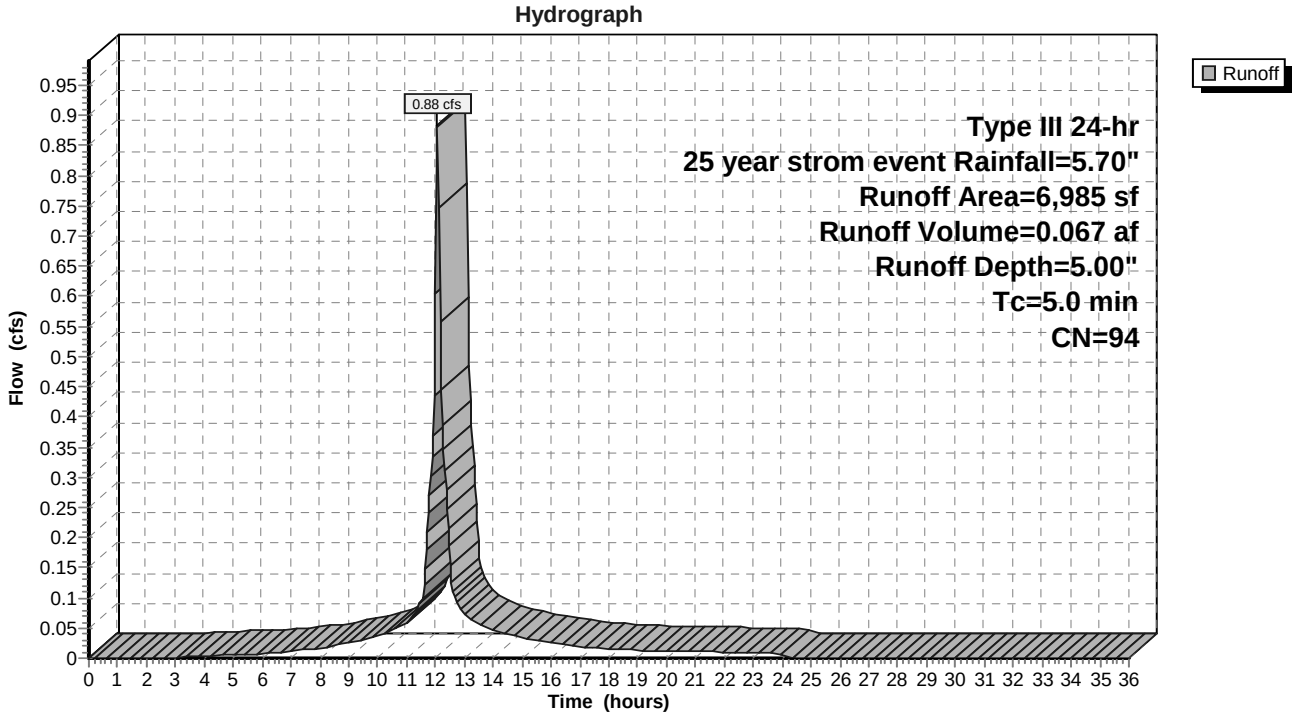
Runoff = 0.88 cfs @ 12.07 hrs, Volume= 0.067 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 year strom event Rainfall=5.70"

	Area (sf)	CN	Description
*	3,783	98	proposed roof area
*	1,429	98	proposed driveway
	1,773	84	50-75% Grass cover, Fair, HSG D
	6,985	94	Weighted Average
	1,773		25.38% Pervious Area
	5,212		74.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, direct enrtry**

Subcatchment Post 3: Post Development - Sub Catchment # 3



Summary for Subcatchment Pre 1: Pre Development - Sub Catchment # 1

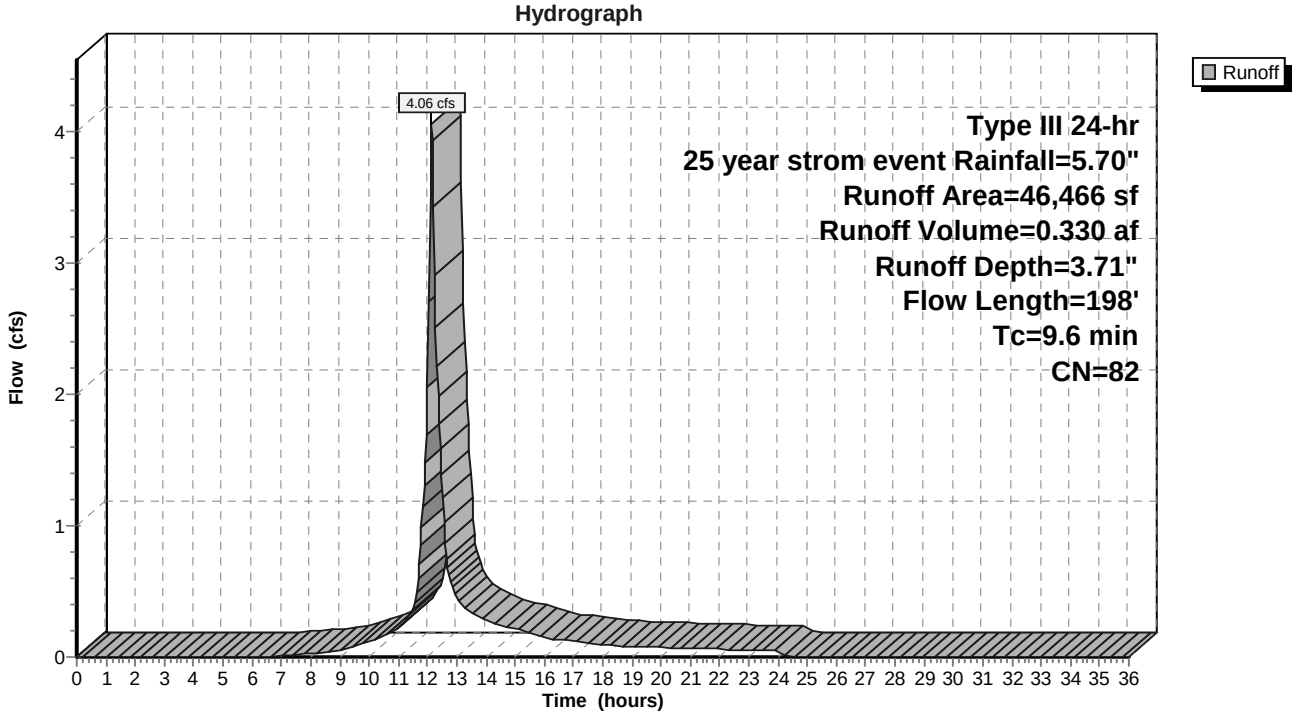
Runoff = 4.06 cfs @ 12.13 hrs, Volume= 0.330 af, Depth= 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 year strom event Rainfall=5.70"

	Area (sf)	CN	Description
*	1,811	79	wetlands
	17,351	84	50-75% Grass cover, Fair, HSG D
	23,337	79	Woods, Fair, HSG D
*	1,444	98	Existing garage roof
*	2,523	98	existing driveway
	46,466	82	Weighted Average
	42,499		91.46% Pervious Area
	3,967		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	108	0.0740	0.20		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.4	41	0.0500	1.57		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.6	198	Total			

Subcatchment Pre 1: Pre Development - Sub Catchment # 1



Summary for Subcatchment Pre 2: Pre Development - Sub Catchment # 2

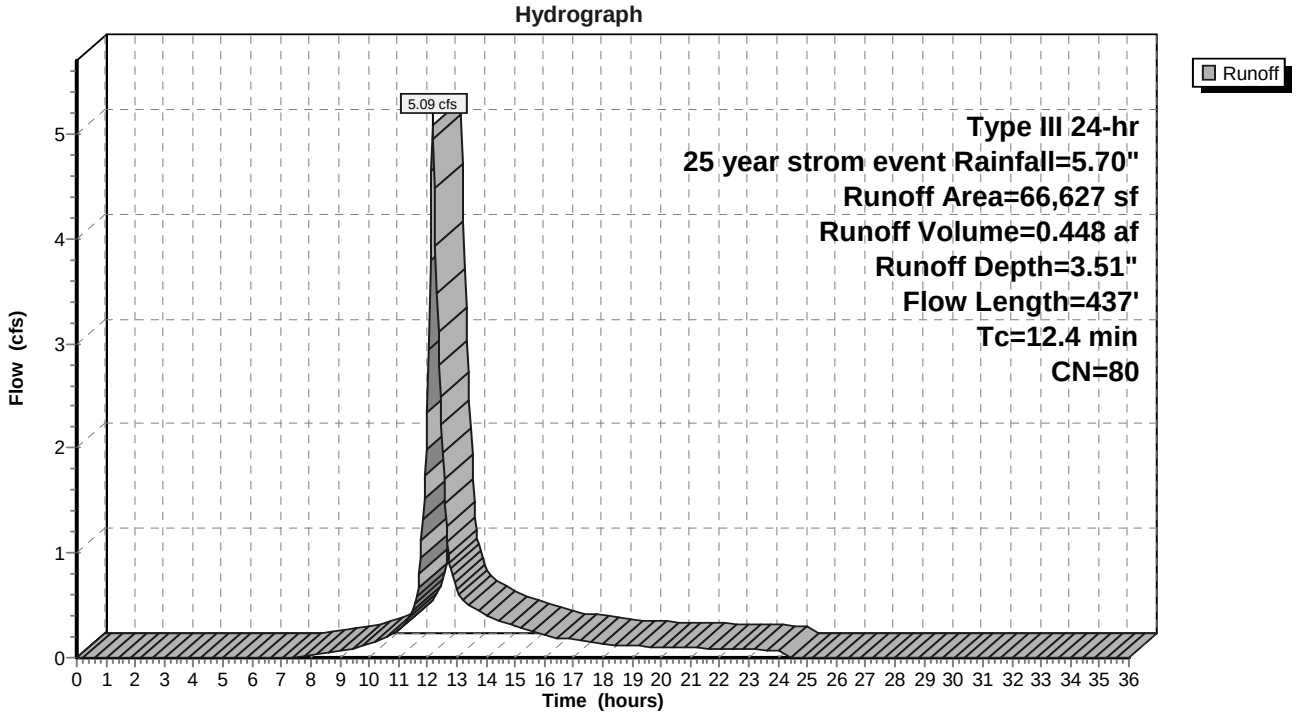
Runoff = 5.09 cfs @ 12.17 hrs, Volume= 0.448 af, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 year strom event Rainfall=5.70"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	18,913	84	50-75% Grass cover, Fair, HSG D
	39,627	79	Woods, Fair, HSG D
	66,627	80	Weighted Average
	66,627		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.4	437	Total			

Subcatchment Pre 2: Pre Development - Sub Catchment # 2



Summary for Pond Det 1: Detention Basin # 1

Inflow Area = 0.160 ac, 74.62% Impervious, Inflow Depth = 5.00" for 25 year strom event event
Inflow = 0.88 cfs @ 12.07 hrs, Volume= 0.067 af
Outflow = 0.29 cfs @ 12.34 hrs, Volume= 0.067 af, Atten= 67%, Lag= 16.1 min
Discarded = 0.03 cfs @ 9.68 hrs, Volume= 0.043 af
Primary = 0.26 cfs @ 12.34 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 46.71' @ 12.34 hrs Surf.Area= 1,278 sf Storage= 950 cf

Plug-Flow detention time= 99.2 min calculated for 0.067 af (100% of inflow)
Center-of-Mass det. time= 99.1 min (868.0 - 768.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	45.50'	535 cf	**18.00'W x 71.00'L x 1.54'H Field A** 1,970 cf Overall - 633 cf Embedded = 1,337 cf x 40.0% Voids
#2A	46.00'	633 cf	**Cultec C-100HD** x 45 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 5 rows
		1,168 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	46.66'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600
#3	Discarded	45.50'	**1.090 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 9.68 hrs HW=45.52' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.26 cfs @ 12.34 hrs HW=46.71' (Free Discharge)
├**1=Orifice/Grate** (Orifice Controls 0.25 cfs @ 2.83 fps)
└**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.79 fps)

Pond Det 1: Detention Basin # 1 - Chamber Wizard Field A

Chamber Model = Cultec C-100HD (Cultec Contactor® 100HD)
Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf
Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap
Row Length Adjustment= +0.50' x 1.86 sf x 5 rows

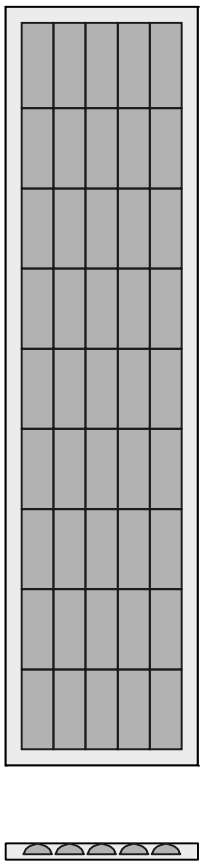
9 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 68.00' Row Length +18.0" End Stone x 2 = 71.00' Base Length
5 Rows x 36.0" Wide + 18.0" Side Stone x 2 = 18.00' Base Width
6.0" Base + 12.5" Chamber Height = 1.54' Field Height

45 Chambers x 14.0 cf +0.50' Row Adjustment x 1.86 sf x 5 Rows = 632.9 cf Chamber Storage

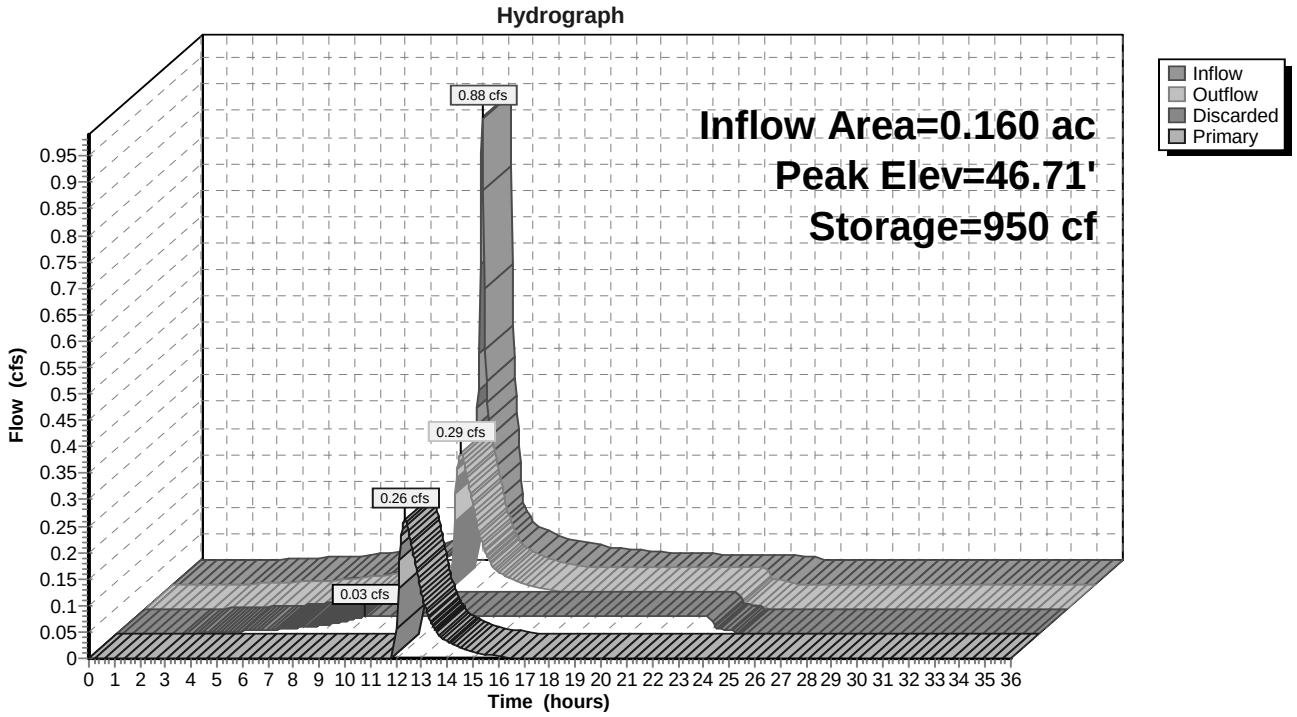
1,970.3 cf Field - 632.9 cf Chambers = 1,337.3 cf Stone x 40.0% Voids = 534.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,167.8 cf = 0.027 af
Overall Storage Efficiency = 59.3%
Overall System Size = 71.00' x 18.00' x 1.54'

45 Chambers
73.0 cy Field
49.5 cy Stone



Pond Det 1: Detention Basin # 1

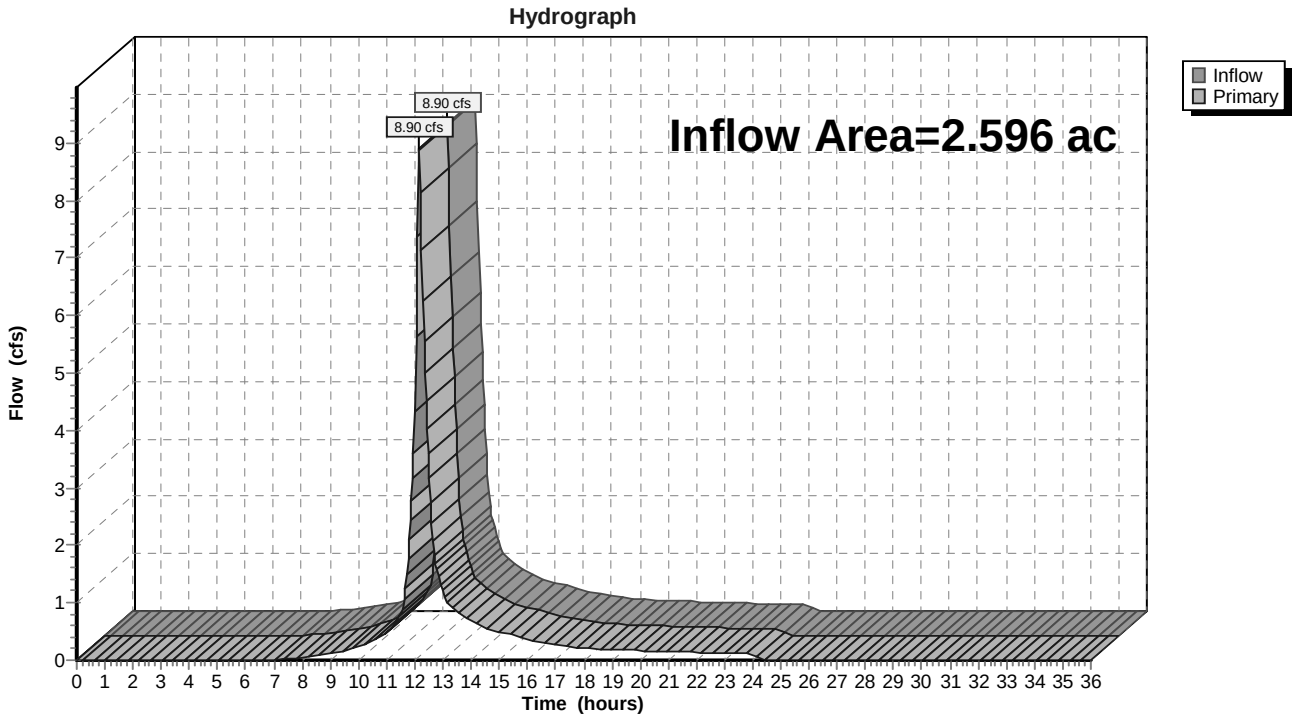


Summary for Link Post: Design Point - south west property line

Inflow Area = 2.596 ac, 8.48% Impervious, Inflow Depth = 3.54" for 25 year strom event event
Inflow = 8.90 cfs @ 12.15 hrs, Volume= 0.766 af
Primary = 8.90 cfs @ 12.15 hrs, Volume= 0.766 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Post: Design Point - south west property line

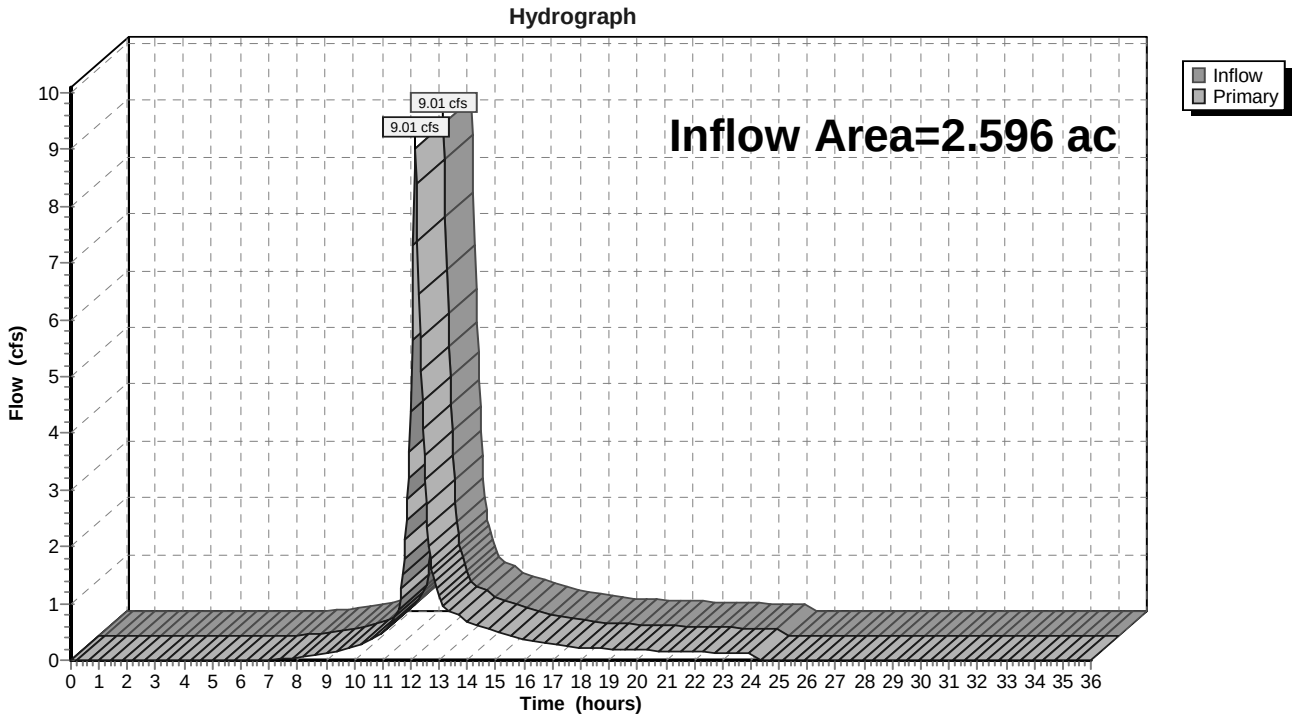


Summary for Link Pre: Design Point - sourth west property line

Inflow Area = 2.596 ac, 3.51% Impervious, Inflow Depth = 3.59" for 25 year strom event event
Inflow = 9.01 cfs @ 12.15 hrs, Volume= 0.778 af
Primary = 9.01 cfs @ 12.15 hrs, Volume= 0.778 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Pre: Design Point - sourth west property line



Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Post 1: Post Development - Runoff Area=50,434 sf 8.68% Impervious Runoff Depth=4.46"
Flow Length=203' Tc=9.4 min CN=83 Runoff=5.30 cfs 0.431 af

Subcatchment Post 2: Pre Development - Runoff Area=55,668 sf 0.00% Impervious Runoff Depth=4.14"
Flow Length=388' Tc=12.1 min CN=80 Runoff=5.05 cfs 0.441 af

Subcatchment Post 3: Post Development - Runoff Area=6,985 sf 74.62% Impervious Runoff Depth=5.69"
Tc=5.0 min CN=94 Runoff=1.00 cfs 0.076 af

Subcatchment Pre 1: Pre Development - Runoff Area=46,466 sf 8.54% Impervious Runoff Depth=4.36"
Flow Length=198' Tc=9.6 min CN=82 Runoff=4.75 cfs 0.387 af

Subcatchment Pre 2: Pre Development - Runoff Area=66,627 sf 0.00% Impervious Runoff Depth=4.14"
Flow Length=437' Tc=12.4 min CN=80 Runoff=5.99 cfs 0.528 af

Pond Det 1: Detention Basin # 1 Peak Elev=46.82' Storage=1,033 cf Inflow=1.00 cfs 0.076 af
Discarded=0.03 cfs 0.046 af Primary=0.39 cfs 0.030 af Outflow=0.42 cfs 0.076 af

Link Post: Design Point - south west property line Inflow=10.48 cfs 0.903 af
Primary=10.48 cfs 0.903 af

Link Pre: Design Point - sourth west property line Inflow=10.57 cfs 0.915 af
Primary=10.57 cfs 0.915 af

Total Runoff Area = 5.192 ac Runoff Volume = 1.864 af Average Runoff Depth = 4.31"
94.01% Pervious = 4.881 ac 5.99% Impervious = 0.311 ac

Summary for Subcatchment Post 1: Post Development - Sub Catchment # 1

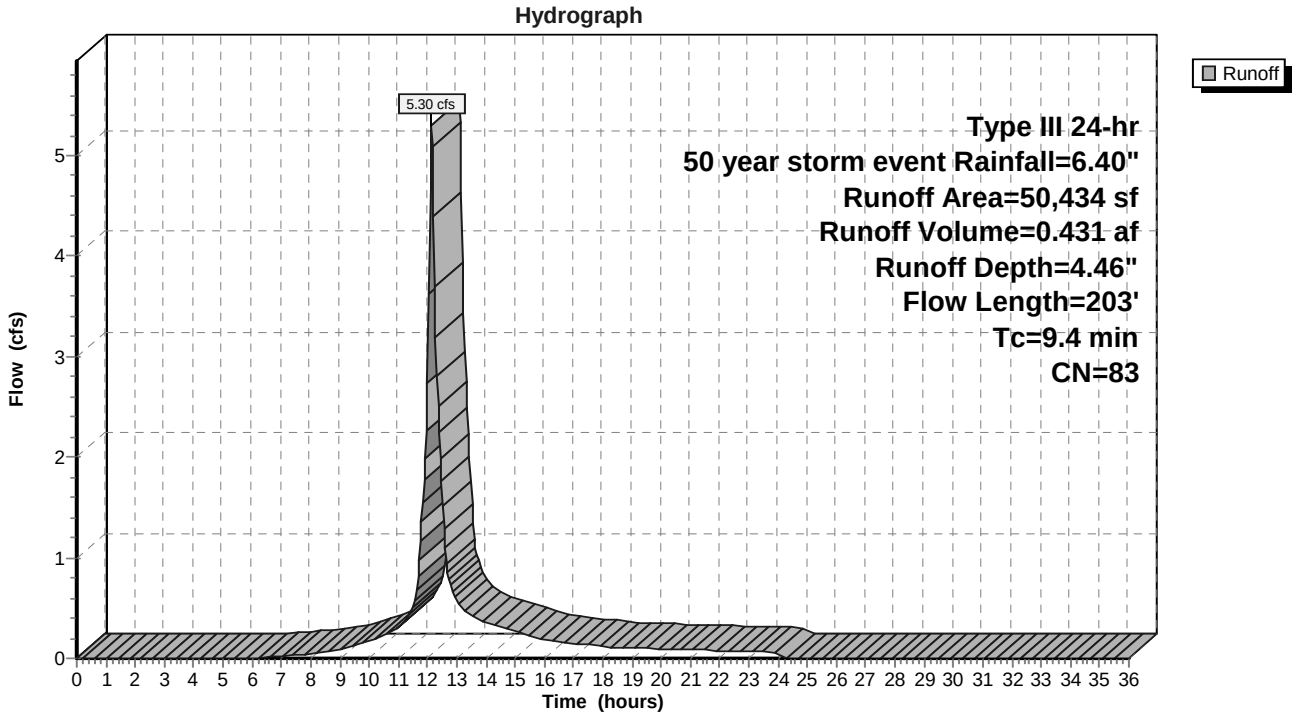
Runoff = 5.30 cfs @ 12.13 hrs, Volume= 0.431 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 year storm event Rainfall=6.40"

	Area (sf)	CN	Description
*	240	98	portion proposed driveway
*	2,523	98	existing driveway
*	1,444	98	existing garage roof
	1,811	79	Woods, Fair, HSG D
	16,779	84	50-75% Grass cover, Fair, HSG D
	21,561	79	Woods, Fair, HSG D
	5,905	84	50-75% Grass cover, Fair, HSG D
*	171	98	proposed walk
	50,434	83	Weighted Average
	46,056		91.32% Pervious Area
	4,378		8.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	113	0.0820	0.21		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.3	41	0.1460	2.67		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.4	203	Total			

Subcatchment Post 1: Post Development - Sub Catchment # 1



Summary for Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)

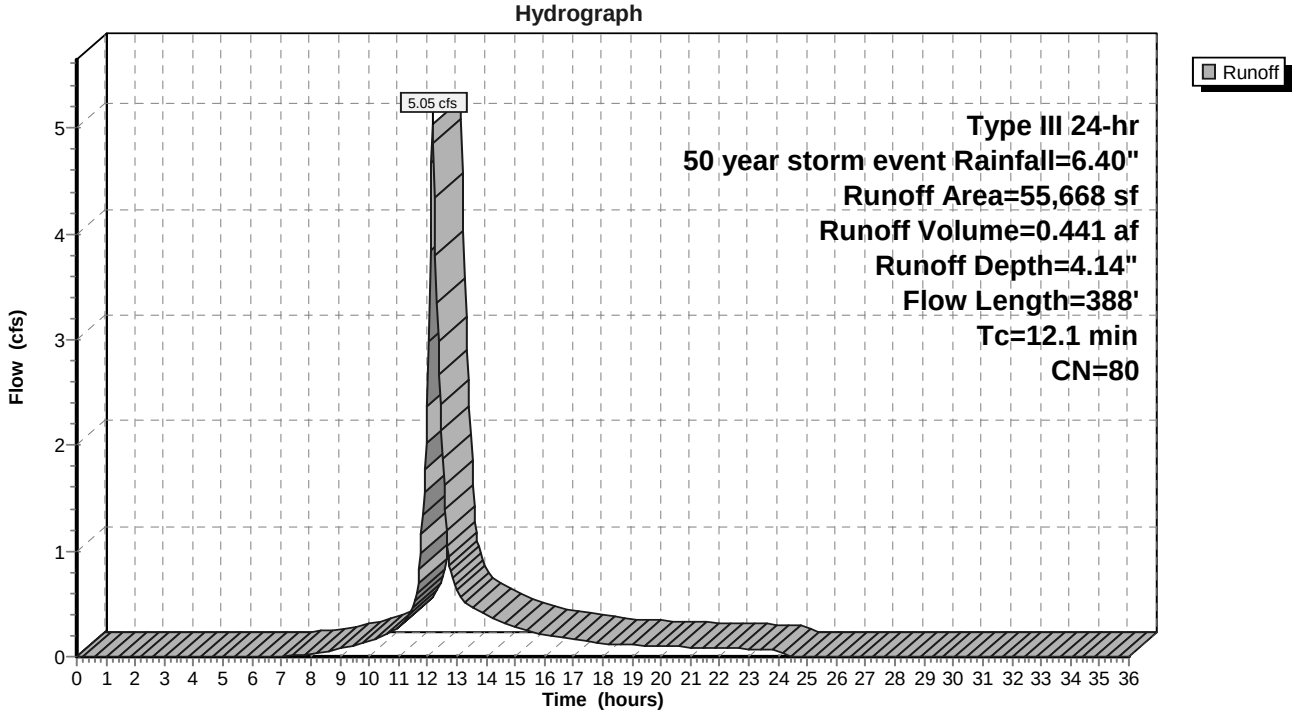
Runoff = 5.05 cfs @ 12.17 hrs, Volume= 0.441 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 year storm event Rainfall=6.40"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	12,934	84	50-75% Grass cover, Fair, HSG D
	34,647	79	Woods, Fair, HSG D
	55,668	80	Weighted Average
	55,668		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.1	388	Total			

Subcatchment Post 2: Pre Development - Sub Catchment # 2 (Remaining Area)



Summary for Subcatchment Post 3: Post Development - Sub Catchment # 3

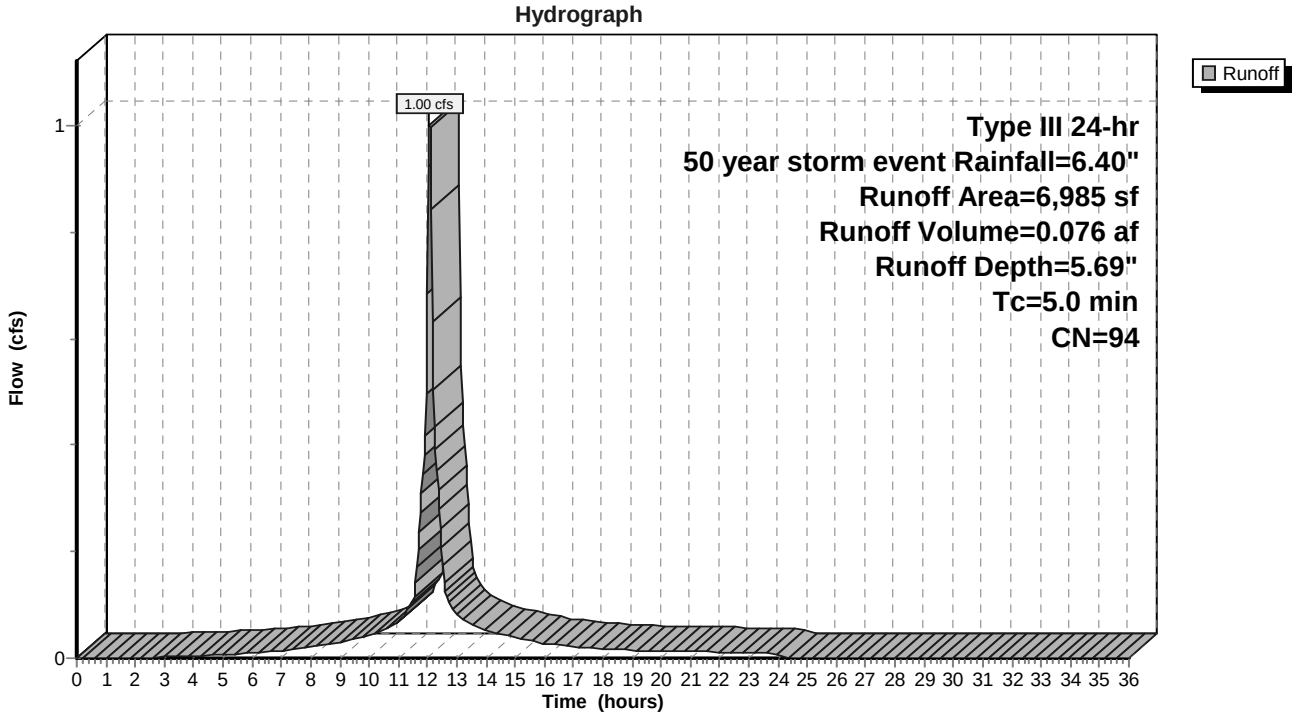
Runoff = 1.00 cfs @ 12.07 hrs, Volume= 0.076 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 year storm event Rainfall=6.40"

	Area (sf)	CN	Description
*	3,783	98	proposed roof area
*	1,429	98	proposed driveway
	1,773	84	50-75% Grass cover, Fair, HSG D
	6,985	94	Weighted Average
	1,773		25.38% Pervious Area
	5,212		74.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, direct enrtry**

Subcatchment Post 3: Post Development - Sub Catchment # 3



Summary for Subcatchment Pre 1: Pre Development - Sub Catchment # 1

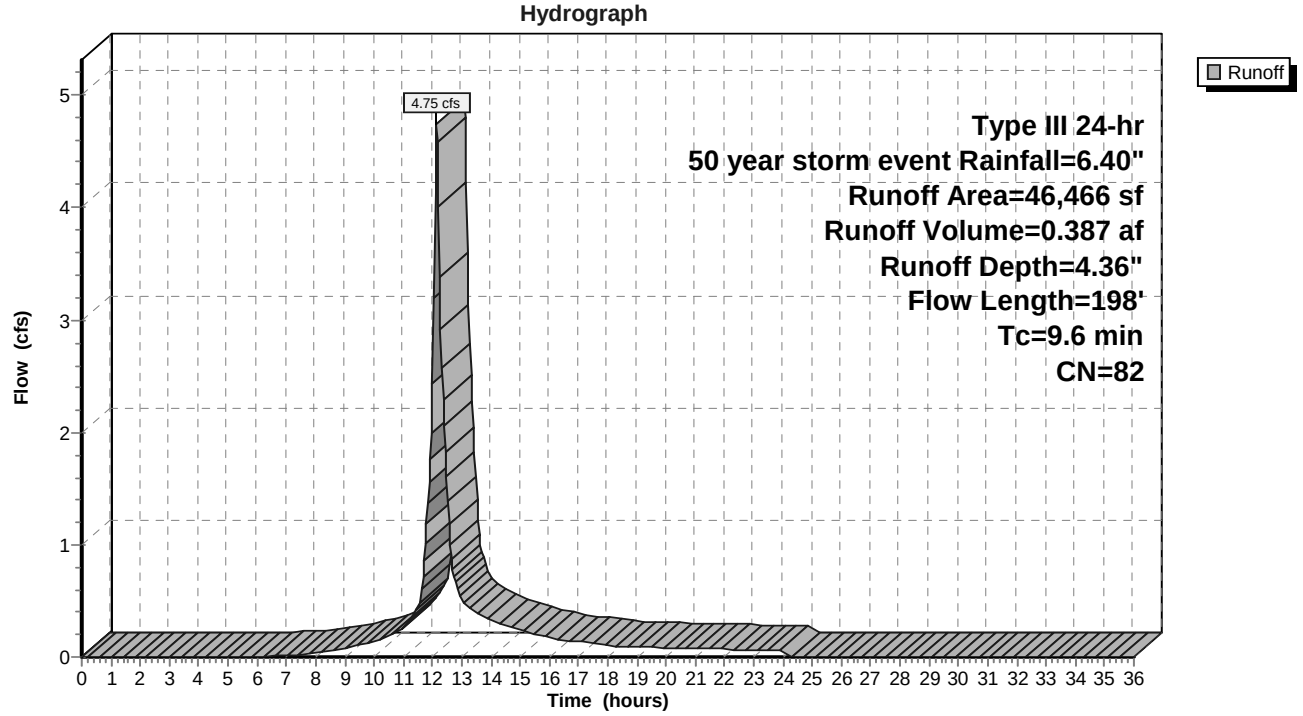
Runoff = 4.75 cfs @ 12.13 hrs, Volume= 0.387 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 year storm event Rainfall=6.40"

	Area (sf)	CN	Description
*	1,811	79	wetlands
	17,351	84	50-75% Grass cover, Fair, HSG D
	23,337	79	Woods, Fair, HSG D
*	1,444	98	Existing garage roof
*	2,523	98	existing driveway
	46,466	82	Weighted Average
	42,499		91.46% Pervious Area
	3,967		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	108	0.0740	0.20		**Sheet Flow, sheet flow** Grass: Dense n= 0.240 P2= 3.30"
0.4	41	0.0500	1.57		**Shallow Concentrated Flow, shallow concentrated flow** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
9.6	198	Total			

Subcatchment Pre 1: Pre Development - Sub Catchment # 1



Summary for Subcatchment Pre 2: Pre Development - Sub Catchment # 2

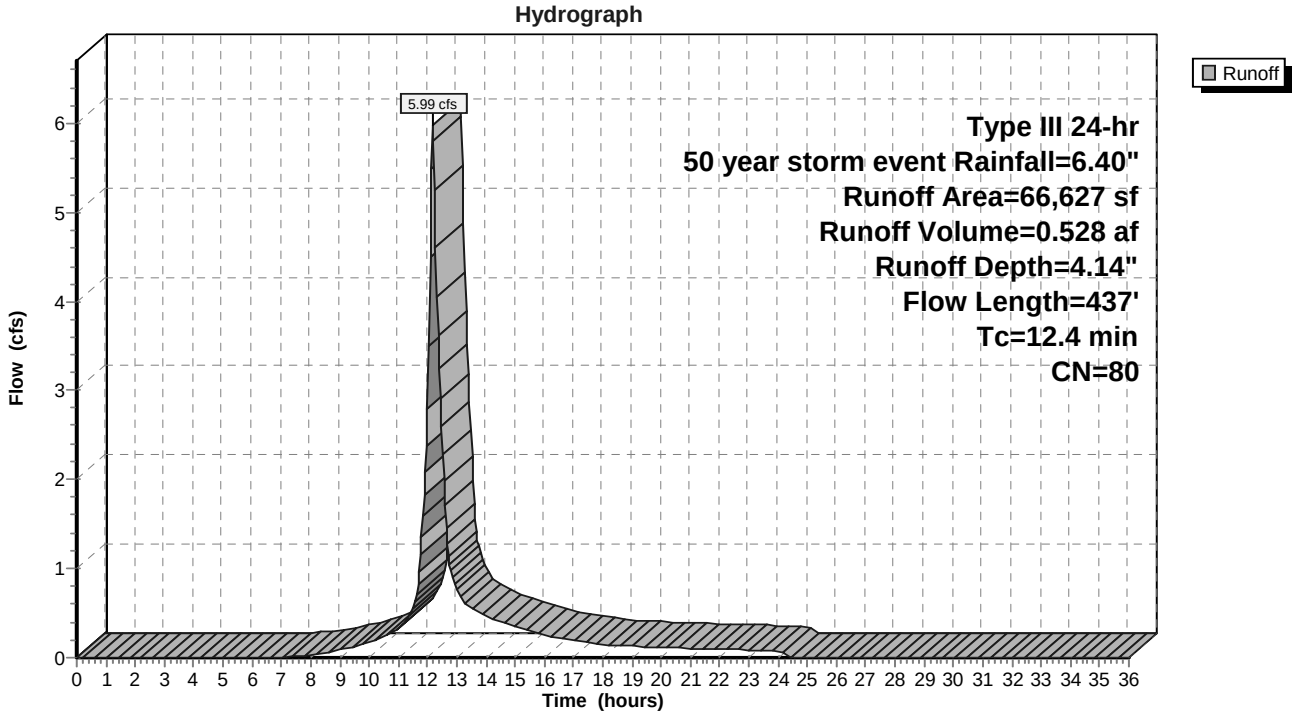
Runoff = 5.99 cfs @ 12.17 hrs, Volume= 0.528 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 50 year storm event Rainfall=6.40"

	Area (sf)	CN	Description
*	8,087	79	wetlands
	18,913	84	50-75% Grass cover, Fair, HSG D
	39,627	79	Woods, Fair, HSG D
	66,627	80	Weighted Average
	66,627		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	102	0.1760	0.19		**Sheet Flow, sheet flow** Woods: Light underbrush n= 0.400 P2= 3.30"
3.1	286	0.0970	1.56		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
0.3	49	0.2250	2.37		**Shallow Concentrated Flow, shallow concentrated flow** Woodland Kv= 5.0 fps
12.4	437	Total			

Subcatchment Pre 2: Pre Development - Sub Catchment # 2



Summary for Pond Det 1: Detention Basin # 1

Inflow Area = 0.160 ac, 74.62% Impervious, Inflow Depth = 5.69" for 50 year storm event event
Inflow = 1.00 cfs @ 12.07 hrs, Volume= 0.076 af
Outflow = 0.42 cfs @ 12.25 hrs, Volume= 0.076 af, Atten= 58%, Lag= 10.8 min
Discarded = 0.03 cfs @ 9.24 hrs, Volume= 0.046 af
Primary = 0.39 cfs @ 12.25 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs / 2
Peak Elev= 46.82' @ 12.25 hrs Surf.Area= 1,278 sf Storage= 1,033 cf

Plug-Flow detention time= 95.5 min calculated for 0.076 af (100% of inflow)
Center-of-Mass det. time= 95.4 min (861.3 - 765.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	45.50'	535 cf	**18.00'W x 71.00'L x 1.54'H Field A** 1,970 cf Overall - 633 cf Embedded = 1,337 cf x 40.0% Voids
#2A	46.00'	633 cf	**Cultec C-100HD** x 45 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 5 rows
		1,168 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	46.66'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600
#3	Discarded	45.50'	**1.090 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 9.24 hrs HW=45.52' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.39 cfs @ 12.25 hrs HW=46.82' (Free Discharge)
├**1=Orifice/Grate** (Orifice Controls 0.28 cfs @ 3.23 fps)
└**2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.35 fps)

Pond Det 1: Detention Basin # 1 - Chamber Wizard Field A

Chamber Model = Cultec C-100HD (Cultec Contactor® 100HD)
Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf
Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap
Row Length Adjustment= +0.50' x 1.86 sf x 5 rows

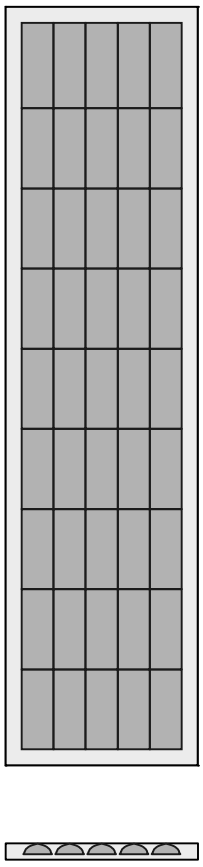
9 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 68.00' Row Length +18.0" End Stone x 2 = 71.00' Base Length
5 Rows x 36.0" Wide + 18.0" Side Stone x 2 = 18.00' Base Width
6.0" Base + 12.5" Chamber Height = 1.54' Field Height

45 Chambers x 14.0 cf +0.50' Row Adjustment x 1.86 sf x 5 Rows = 632.9 cf Chamber Storage

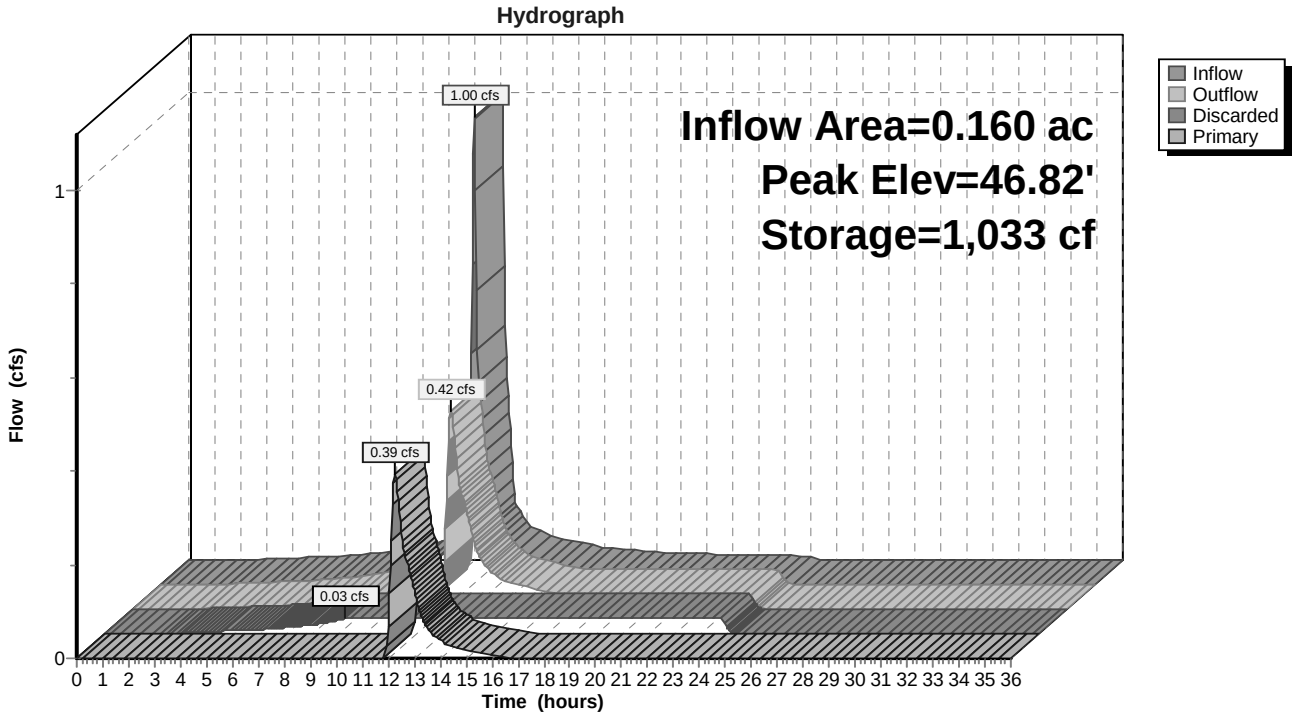
1,970.3 cf Field - 632.9 cf Chambers = 1,337.3 cf Stone x 40.0% Voids = 534.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,167.8 cf = 0.027 af
Overall Storage Efficiency = 59.3%
Overall System Size = 71.00' x 18.00' x 1.54'

45 Chambers
73.0 cy Field
49.5 cy Stone



Pond Det 1: Detention Basin # 1

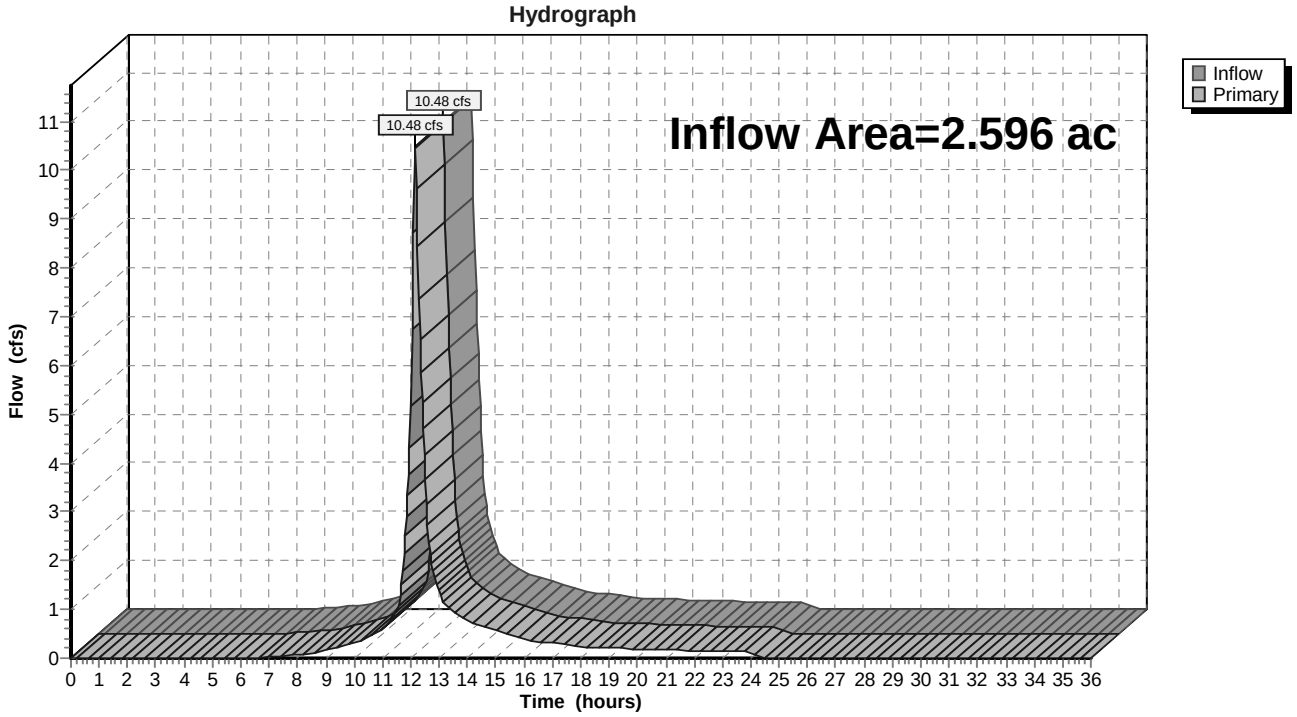


Summary for Link Post: Design Point - south west property line

Inflow Area = 2.596 ac, 8.48% Impervious, Inflow Depth = 4.17" for 50 year storm event event
Inflow = 10.48 cfs @ 12.15 hrs, Volume= 0.903 af
Primary = 10.48 cfs @ 12.15 hrs, Volume= 0.903 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Post: Design Point - south west property line



Summary for Link Pre: Design Point - sourth west property line

Inflow Area = 2.596 ac, 3.51% Impervious, Inflow Depth = 4.23" for 50 year storm event event
Inflow = 10.57 cfs @ 12.15 hrs, Volume= 0.915 af
Primary = 10.57 cfs @ 12.15 hrs, Volume= 0.915 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Link Pre: Design Point - sourth west property line